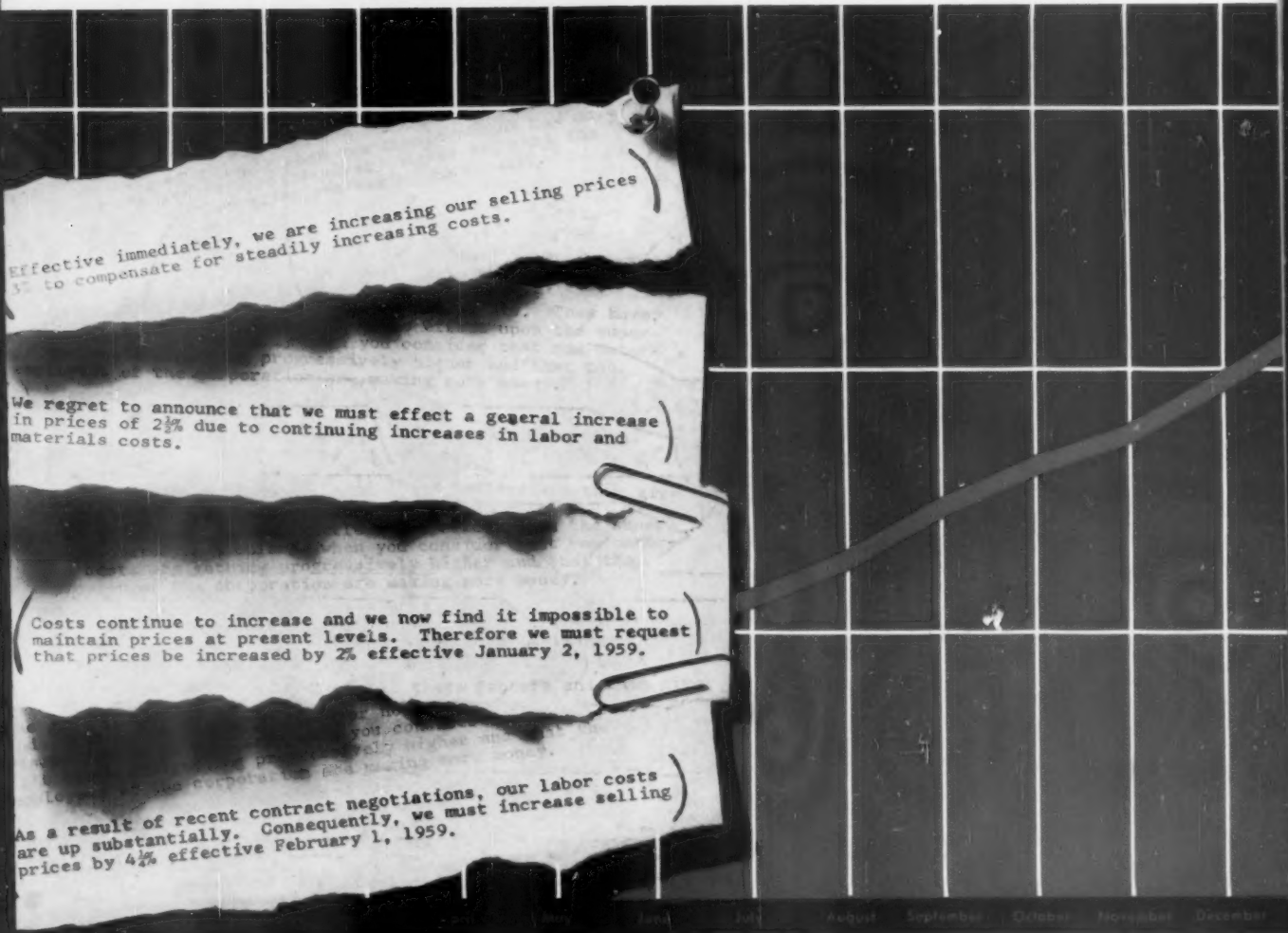


DECEMBER 22, 1958

# PURCHASING

The Methods and News Magazine for Industrial Buyers



## How Good Buying Prevents Excessive Price Increases

**P. A.'s Predict Renewed Inflation page 15**

**THREE WAYS TO KEEP COSTS DOWN:**

**1. Purchase Quantity Adjustments 2. Value Analysis 3. Competitive Bidding**

**Start on page 49**

*A Conover-Mast Publication*

*Seventy-five Cents*

**Table of Contents page 5**



## Booster shots for bumper crops

All living things need help to grow, the fruits of the earth no less than the children of man. In the West, crop yields are kept high with nitrogen-rich ammonia fertilizer by Shell Chemical.

Nitrojection Service® is the Shell-developed method of injecting ammonia gas directly into the soil with modified cultivator shanks. Nitrogen—vital to plant growth—is placed at root

depth . . . with startling results. Fertilizer investment is usually repaid *fourfold* by increased crop yield.

Pioneering with nitrogen fertilizers and better ways to use them is an important Shell Chemical contribution to the nation's agricultural productivity.

## Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

SAN FRANCISCO

Anhydrous Ammonia • Ammonium Sulphate • Urea • Ammonium Phosphate Sulphate • Di-Ammonium Phosphate • Triple Superphosphate

For More Information Write No. 151 on Inquiry Card—Page 32





## SKF puts its best foot forward

You're taking a step in the right direction when you call in the SKF man. First—you are enlisting the aid of a skilled engineer who is eager to apply his broad background and experience to your particular anti-friction prob-

lems. Second—he's the man that has a complete line of bearings available (more than 3000 sizes in the four basic types). Need convincing? Just call the nearest SKF office—and watch him prove it!

7823



Spherical, Cylindrical, Ball, and *Tyson* Tapered Roller Bearings

EVERY TYPE—EVERY USE

**SKF**

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

REG. U. S. PAT. OFF.

# Hot water always on tap

Ruud Engineers Say

## WOLVERINE TRUFIN<sup>®</sup> HAS "NINE TIMES THE CAPACITY"

In its nearly 70 years as a leading manufacturer of water heaters, Ruud Manufacturing Company of Kalamazoo, Michigan has established an enviable reputation for the outstanding efficiency and quality of its products.

Contributing in a high degree to this efficiency and quality is Ruud's use of Wolverine Trufin — the integrally finned heat exchanger tube manufactured by Wolverine Tube.

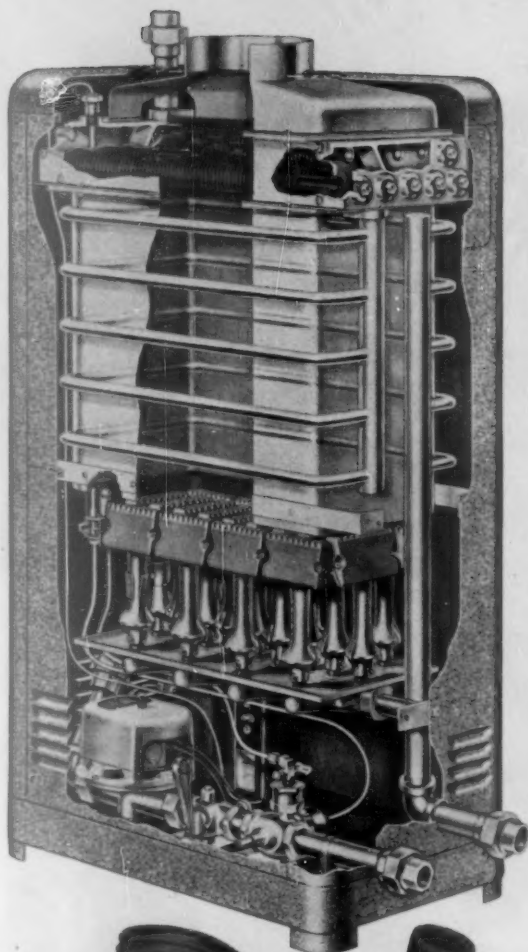
Because of its great heat transfer capabilities Ruud uses high finned Trufin H/A and H/R as the heat exchangers of its water heaters. In describing these exchangers, Ruud engineers say "The heat exchangers consist of copper fin tubes (Wolverine Trufin) having nine times the heat absorbing capacity of plain tubing of like diameter."

Trufin's tremendous capacity to transfer more BTU's per foot of tube also helps Ruud design units that are extremely compact — requires only 3½ square feet of heat floor space. And because Trufin's fins are actually an integral part of the tube wall, they can never shake loose under the stresses of the temperatures and vibrations encountered in water heaters.

Wolverine Trufin is the original integrally finned heat exchanger tube. It is available in a wide range of alloys, types and sizes. If your product or manufacturing process calls for finned tube don't settle for substitutes. Like Ruud, specify Wolverine Trufin. For complete information write for your copy of the Trufin Catalog.

Wolverine Trufin is available in Canada through  
the Unifin Tube Division, London, Ontario.

See Wolverine's exhibit at the 14th  
International Heating and Air Condi-  
tioning Exposition, Philadelphia, Pa.,  
January 26-29.



WOLVERINE TRUFIN  
TYPE H/R



WOLVERINE TRUFIN  
TYPE H/A



TRUFIN TYPE H/R is used in the Ruud unit above  
because of its tremendous heat absorbing capacity.

CALUMET & HECLA, INC.  
CALUMET DIVISION  
URANIUM DIVISION  
GOODMAN LUMBER DIVISION  
WOLVERINE TUBE DIVISION

In Canada:

CALUMET & HECLA OF CANADA LIMITED  
WOLVERINE TUBE DIVISION  
CANADA VULCANIZER & EQUIPMENT CO. LTD.  
UNIFIN TUBE DIVISION

### WOLVERINE TUBE

DIVISION OF  
CALUMET & HECLA, INC.

17250 Southfield Road  
Allen Park, Michigan

Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALA.

SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPT., 11 E. 40TH ST., NEW YORK 16, N.Y.

For More Information Write No. 155 on Inquiry Card—Page 32

PURCHASING



**B.F. Goodrich**

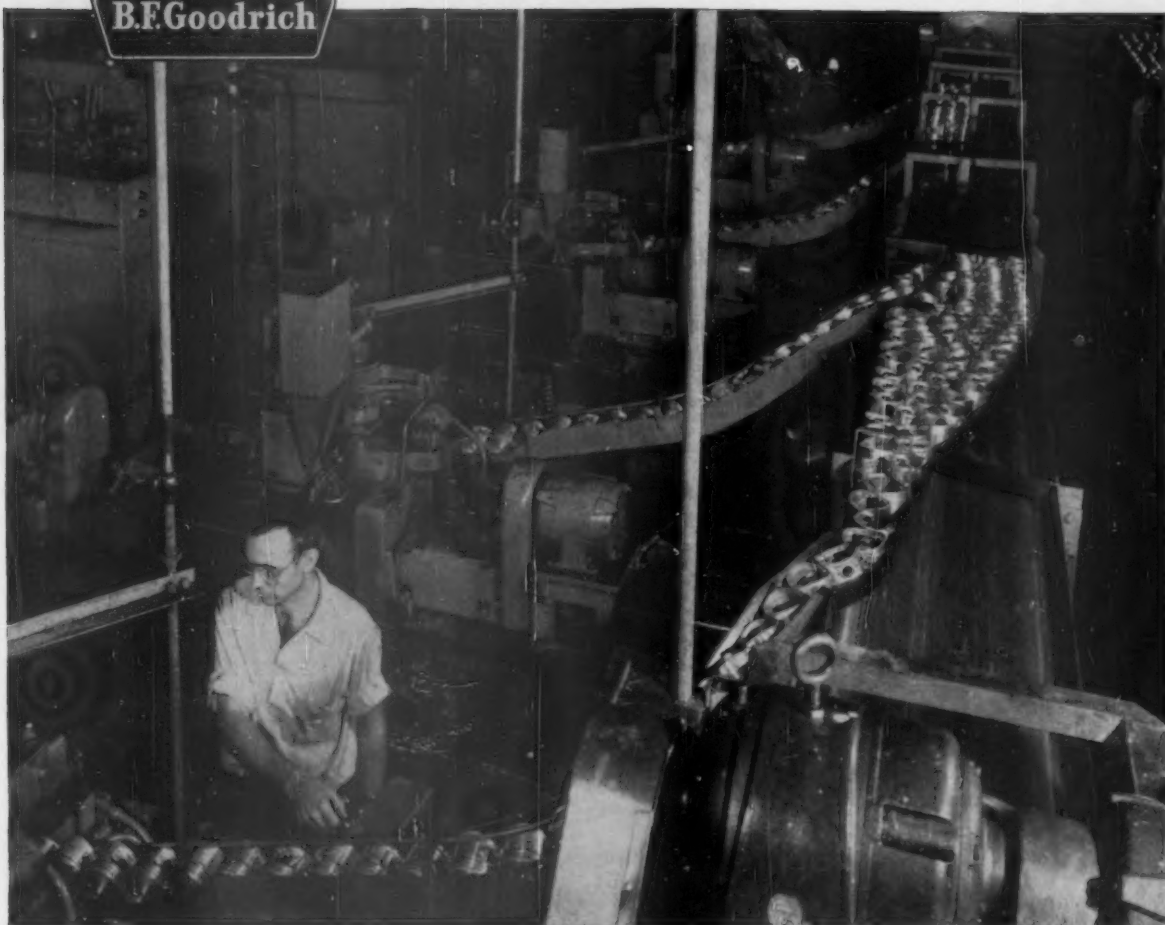


Photo: Cleveland Engine Plant No. 1, Ford Motor Co.

## Piston-packing belt helps build new cars

### *A typical example of B.F. Goodrich product improvement*

**Problem:** The combination of sharp edges and oil on those pistons was ruining conveyor belts in four months. They cut grooves in the belt, ripped it, tore off the fasteners which held the belt together. The oil soaked into the belt cover, softened it, formed a dirty scum on the surface. Belts had to be cleaned and repaired constantly.

**What was done:** When a B.F. Goodrich distributor heard of the problem, he recommended a new B.F. Goodrich conveyor belt made of Koroseal flexi-

ble material. Koroseal resists scuffing, tearing, cutting; it stands oil, grease, most acids and just about everything else that ruins other materials. It can be vulcanized into a continuous belt, eliminating troublesome fasteners.

**Savings:** Over 2 million pistons have been carried by this Koroseal belt. It's still going strong after a year's service—three times longer than the belt it replaced. Even though this is a premium-priced belt, its cost when measured in terms of useful service is

48% lower than the belting it replaced.

**Extra benefits:** Because the belt has a smooth, nonporous surface that's easy to clean, "locating holes" in the pistons don't get plugged up with dirt.

**Where to buy:** Your B.F. Goodrich distributor has the exact specifications for the Koroseal belt described here. And, as a factory-trained specialist in rubber products, he can answer your questions about *all* the many products B.F. Goodrich makes for industry. B.F. Goodrich Industrial Products Company, Dept. M-445, Akron 18, Ohio.

Koroseal—T. M. Reg. U. S. Pat. Off.

# B.F. Goodrich *industrial products*

# Neglected area of cost-control-opportunity uncovered by NEW BOOK

Guide to potential 4% profit increase makes Texaco book latest business best seller

**Why you need it:** The Texaco guide uncovers a new area where management can effect real economies in reduced maintenance costs. This is especially important now that decentralization and generally lower profit margins make the profit-and-loss statement the real measure of each plant unit's management efficiency.

**What it will tell you:** With facts like these, the Texaco guide shows that organized lubrication can raise production, extend parts life, and cut downtime:



★ A metalworking manufacturer saved 315 man-hours per month through more efficient lubrication.

★ A major corporation anticipates substantial maintenance savings through the services of a lubrication engineer.

THE TEXAS COMPANY  
Dept. P-71  
135 East 42nd Street  
New York 17, N. Y.



Please send me *Management Practices that Control Costs via Organized Lubrication*.

Name \_\_\_\_\_

Title \_\_\_\_\_

★ A mill has increased bearing life from 16 to 72 shifts by instituting systematic lubrication that insures the right lubricant for each machine.

**How it will help you:** Only organized lubrication gives management such an opportunity for savings. For example, a 10% reduction in maintenance costs through better lubrication methods will increase profits up to 4% in the average plant—more than equivalent to a 4% increase in sales. And Texaco's new guide shows how it may be done.

**How to get your copy:** Simply fill in the coupon, attach it to your letterhead, and mail it to The Texas Company, 135 East 42nd Street, New York 17, N. Y.

For More Information Write No. 157 on Inquiry Card—Page 32

# PURCHASING

The Methods and News Magazine For Industrial Buyers

DECEMBER 22, 1958  
VOLUME 45, No. 13

B. P. MAST  
Chairman of the Board

B. P. MAST, JR.  
President

RAY RICHARDS  
Publisher

## Purchasing Previews

Straws in the Trade Wind .....	7
Special Industry Report—Nickel .....	11
Purchasing Opinion Poll .....	15
Washington Report .....	23
What Sort of Year Has It Been? .....	47
Purchasing Spearheads Value Analysis Program .....	49
How to Get the Most Out of Competitive Bids .....	John Van de Water 51
The Secret to Field Purchasing: Keep It Simple .....	53
How to Postpone the Effect of Supplier Price Increases .....	Julius Kneitel 54
Broader Authority for Purchasing Brings Results .....	56
6-Man Purchasing Department Sparks Young Company .....	Leonard Sloane 58
How to Control Tools In Suppliers' Plants .....	C. D. Francisco 60

## MONTHLY FEATURES

Highlights of This Issue .....	45
Information for Your Catalog Files .....	28
Letters to the Editor .....	36
Purchasing People .....	40
F.O.B. ....	42
Products and Ideas .....	62
Office Equipment and Supplies .....	80
Association News .....	84
Employment Service .....	96
Index to Advertisers .....	98

## EDITORIAL STAFF

Stuart F. Heinritz  
Senior Editor

Paul V. Farrell  
Editor

Dean S. Ammer  
Executive Editor

Harold Barnett .... Assoc. Managing Editor  
C. D. Francisco .... Mid-Western Editor  
Mary T. Rogan .... Editorial Assistant  
A. W. Gray .... Legal Editor  
Walter E. Willets .... Consulting Editor

Ned Kellogg .... Associate Managing Editor  
Leonard Sloane .... Assistant Editor  
John Van Deventer .... Assistant Editor  
A. N. Weckler .... Washington Editor  
T. C. DuMond .... Contributing Editor

## ART STAFF

E. Carlton Arink .... Art Director  
John Drain .... Associate Art Director

## PRODUCTION STAFF

L. E. McMahon .... Production Manager  
Joan Goodian .... Production Supervisor

CONOVER-MAST PUBLICATIONS, INC.  
EDITORIAL AND EXECUTIVE OFFICES  
205 East 42nd Street, New York 17,  
New York

© 1958 by C-M Business Publications, Inc.  
PURCHASING is an independent journal, not  
the official organ of any association. Es-  
tablished 1915 as "The Purchasing Agent,"  
Consolidated with "The Executive Purchaser."  
Contents are indexed monthly and annually  
by the Engineering Index Service and Busi-  
ness Periodicals Index.

PURCHASING is published every-other-Mon-  
day by C-M Business Publications, Inc.,  
subsidiary of Conover-Mast Publications,  
Inc., at 440 Post Road, Orange, Conn. Edi-  
torial and executive offices, 205 East 42nd  
Street, New York 17, New York. Volume 45,  
No. 13. Subscription rates: United States,  
U. S. Possessions and Canada: \$4.00 per  
year; single copies 75 cents elsewhere,  
\$20.00 per year; single copies, \$1.00. Please  
send all notices of change of address to  
executive offices in New York. Second-Class  
postage paid at Orange, Conn. and at ad-  
ditional mailing offices.

**We build**

**better switches**

**because we can't buy them**

**...IT'S AS SIMPLE  
AS THAT...AND  
THEY COST NO  
MORE THAN  
OTHER SWITCHES**

We had to build Gold-N-Ring Control Switches to meet our own high reliability specifications . . . our reputation was a part of this important fact. We're machine tool builders. We can't afford to be responsible for costly down-time on important capital investment equipment due to inferior control switches. That's why we build them like precise machine tools . . . and why it will pay you to check with us.

A wide range of basic units meets practically every need . . . as well as completely assembled stations in 1 to 4 button sizes to meet your electrical specifications. Ask our representative to call, or send for Bulletin ECS-56 . . . the complete selection and ordering guide.

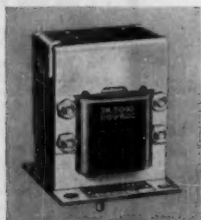
ELECTRICAL MANUFACTURING DIVISION

**National  
Acme**

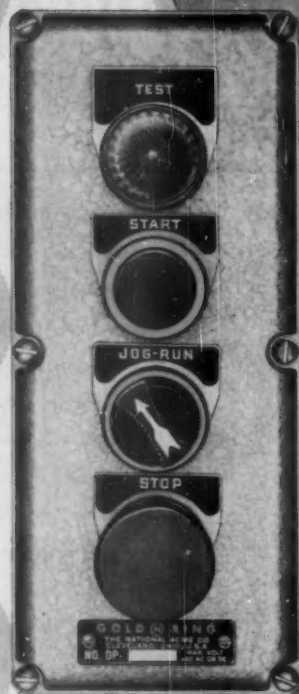
THE NATIONAL  
ACME COMPANY  
191 E. 131st STREET  
CLEVELAND 8, OHIO



**LIMIT SWITCHES.** A full line, originally designed for machine tool applications but now used wherever the highest reliability factors are required. Bulletin EM-51.



**SOLENOIDS.** A full line of standard and custom units for AC or DC. Push or pull types with capacities up to 25 lbs. Bulletin EM-52A.



For More Information Write No. 158 on Inquiry Card—Page 32

**PURCHASING**



# Purchasing Previews

## Straws in the Trade Wind

### ► ANOTHER PURCHASING CHALLENGE

This time, it's the rapid integration of computers into modern business. According to two professors at Harvard Business School, the middle management level will all but disappear by 1988 because of the new data processing equipment. This will create as large a gap between top management and other levels of the company, they say, as presently exists between hourly workers and current management groups. It means purchasing executives will have to step up their drive for a position in top management.

### ► STEEL STRIKE HEDGING BEGINS

Many Midwestern companies are already taking a steel strike on July 1 for granted. They've definitely decided to build-up inventories in anticipation of a walkout by the steelworkers when their three-year labor contract expires. In addition, most of these companies figure there will be a steel price increase of about \$6 per ton.

► **ALUMINUM PRICE FREEZE**—Now that the shouting by the aluminum producers has died down, one thing is certain; the new price freeze is a good break for P.A.'s. All the major producers have agreed that current prices will hold on orders of ingot and pig shipped before

### For the P.A.'s Hot File...

Here's the early '59 line on some industrial supplies: **Chemicals**—Although there's a tapering off of demand, prices appear steady. **Coal**—Usual winter demands aren't affecting market prices to any considerable degree. **Gasoline**—Ample supplies and soft prices. **Steel Drums**—There are rumors that the recent price increase will be withdrawn in the face of poor demand.

next July 1. It means aluminum buyers will not have to place blanket orders for the next six months to cover themselves. This will save a lot of time since they won't have to keep changing specifications.

► **GREATER RESEARCH BUDGETS**—A 6% hike in '59 research expenditures over '58 is being planned by management. This can be a great chance for purchasing executives to fight for a hunk of that budget for purchasing re-

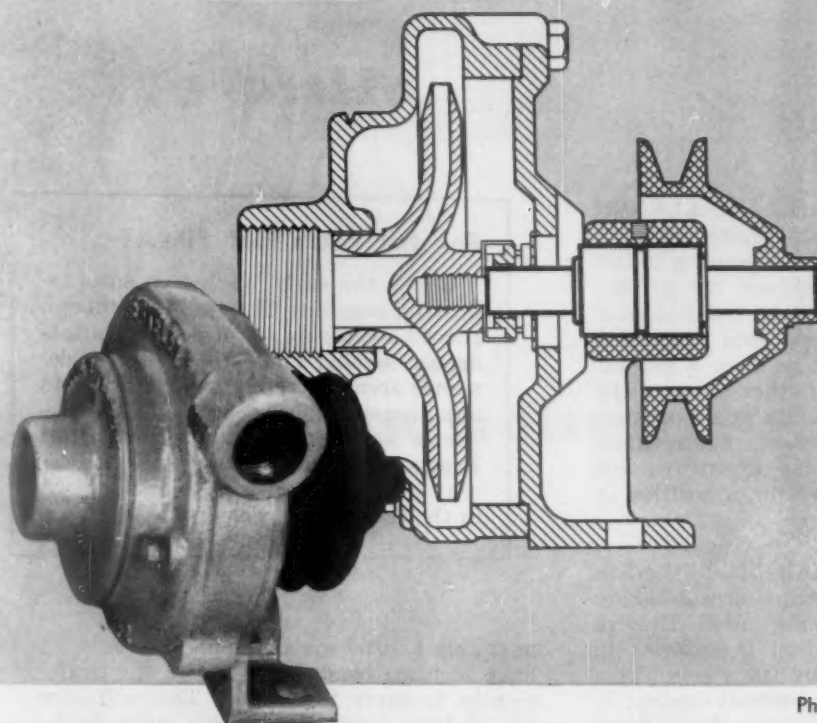
(Turn Page)



New orders for industrial supplies and machinery rose 5.1% according to the latest tally by the American Supply and Machinery Manufacturers' Association. The seasonally adjusted new order index now stands at 187 (July 1948=100), marking the sixth consecutive month of gain. The rise in the index reflects increased orders from the P.A.'s for production tools and equipment.



## CASE HISTORIES



Compact integral shaft and bearing unit eliminates parts — cuts assembly time.

Photo: Courtesy Berkeley Pump Co.

### **Ball Bearings Help Cut Size... Lower Costs \$2.50 Per Pump!**

#### CUSTOMER PROBLEM:

Redesign utility water pump for Air Conditioner market. Conversion must achieve smaller size without reducing pump capacity. At the same time, customer must lower over-all production costs.

#### SOLUTION:

N/D Sales Engineer suggested the versatile New Departure fan and pumpshaft ball bearing. This compact precision bearing permitted use of over-the-housing pulleys with belt load located over the raceway. Its integral shaft, which is the

inner race, simplified design and helped reduce housing size without changing pump capacity. In addition, the sealed and lubricated-for-life bearing replaced two sealed bearings, separate shaft and snap rings . . . cutting part and assembly-time costs \$2.50 per pump.

Perhaps one of New Departure's wide selection of *production* ball bearings will help give *your* product the sales appeal and cost savings you're looking for. For more information, call the New Departure Sales Engineer in your area or write Dept. V-12.



**NEW DEPARTURE**

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

NOTHING ROLLS LIKE A BALL

Available through United Motors System and its independent Bearing Distributors.

### Straws in the Trade Wind

search. New skills, techniques, and processes, that will be of great value to your purchasing department in future years, can be developed and perfected now through research and development.

► **EXPLODING METALS**—There's a new metal forming process being developed called Aeroform. It's a technique for forming by explosion. First use will be in missile production.

► **GETTING RAW MATERIAL DATA**—Many P.A.'s have complained for years that the data available about stocks and supplies of world-wide raw materials is not current enough. Now they have a powerful ally. It's the U.S. Council of the International Chamber of Commerce. This group took note of the "serious" lag in publication of raw material information, and it is urging all governments to give high priority to improving activities in this field.

► **NEW EPOXY PLASTICS**—Wider horizons are in store for epoxy plastics. Up to now, only one basic resin could be produced. Now other lower priced resins are coming to the attention of purchasing agents and many more will be coming up in the future.

► **MORE PRICE HIKES**—Some of the latest price hikes announced by producers are these: carbon electrode and anode prices were raised 5% by National Carbon Company; some carpet prices will be hiked; and two large producers have increased corrugated box prices.

► **PURCHASING FOR THE ATOMIC AGE**—Nucleonics is a term that more P.A.'s will have to become familiar with. More and more they will be buying radioactive gages, tracers, tool bits, and components for power reactors. In order to do their jobs properly, purchasing agents will have to do more than just transfer specifications from the engineering department to the manufacturer. They will have to keep up with the latest developments in the nuclear field. The best source for information: Atomics Industrial Forum in New York.

► **BETTER UTILIZATION OF DIES**—A new lubricant makes it possible for dies to turn out more parts without re-sharpening. Name of the lubricant is molybdenum disulfide, a liquid applied intermittently to steel as it moves through the forming process. In addition, the lubricated dies turn out smoother, deeper finished products with closer tolerances.



William G. Caples

### QUOTE!.....

Present anti-trust laws are not the way to regulate unions and curb union corruption, says a prominent steel executive. According to William G. Caples, vice president of Inland Steel Company, "If unions are a healthy thing in our society—and I believe them to be—then we cannot apply the anti-trust laws as presently written to unions, for to do so might destroy them." He feels, however, that union affairs and actions that affect the interests of workers should be under constant scrutiny.



Hannay reports three times  
the wear for half the cost with...

## Riegel PLASTIC COATED GLOVES



"Real savings," reports Clifford B. Hannay & Son, Inc., after switching from neoprene-latex gloves to Riegel plastic-coated gloves for hot-dipping metal parts. This leading hose reel manufacturer states: "The Riegel plastic resists solvents three times as long. And the tremendous absorbency of the napped lining lets our men work around 180° heat twice as long."

Here are savings made possible because Riegel experts fit the right glove to each specific job... choosing from more than 400 styles and materials. Eight warehouses speed deliveries. For help in reducing your glove costs call or write Riegel today.

Fully Coated Neoprene,  
14½" Gauntlet



### Free catalog!



Fully Coated Vinyl Plastic,  
knit wrist



INDUSTRIAL  
GLOVE SALES

## RIEGEL TEXTILE CORPORATION

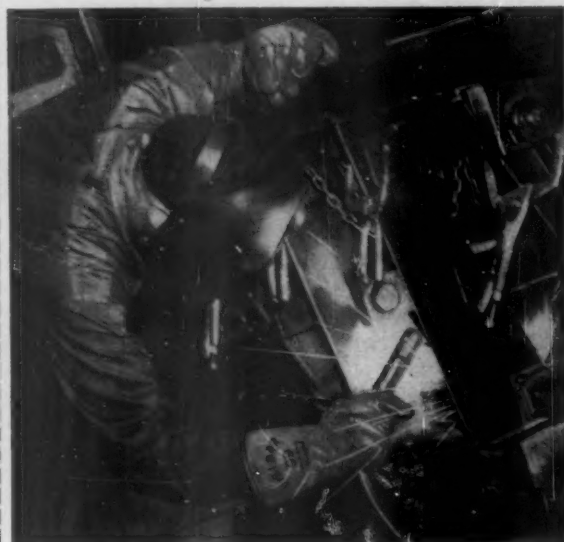
Sales Offices in:  
Birmingham • Chicago • Detroit  
Los Angeles • New York City

# Riegel

GLOVES THAT WEAR ON  
WHEN OTHERS WEAR OUT

How Oliver Corporation Saves  
\$35.00 per man with...

## Riegel WELDER'S GLOVES



"The Riegel No. 99 Heavy Welder lasts six weeks against two weeks for the glove we used formerly. The men tell us it's more comfortable and cooler."

So reports Mr. Richard Thornell, whose switch to Riegel now saves \$35.00 yearly per man at Oliver Corporation, Springfield, Ohio.

No. 99 facts: Heavy but flexible "flectan" welders' leather, gunn cut, wing thumb. Extra roomy, extra long. One-piece back, wool-insulated... all exposed seams welded... full protection against heat and sparks.

Riegel has the service you want, too... industrial specialists to help select the right style... eight warehouses to speed delivery. Write or phone today.

Spot Welder No. 89



Service Welder No. 199



Welder's Mitten No. 98

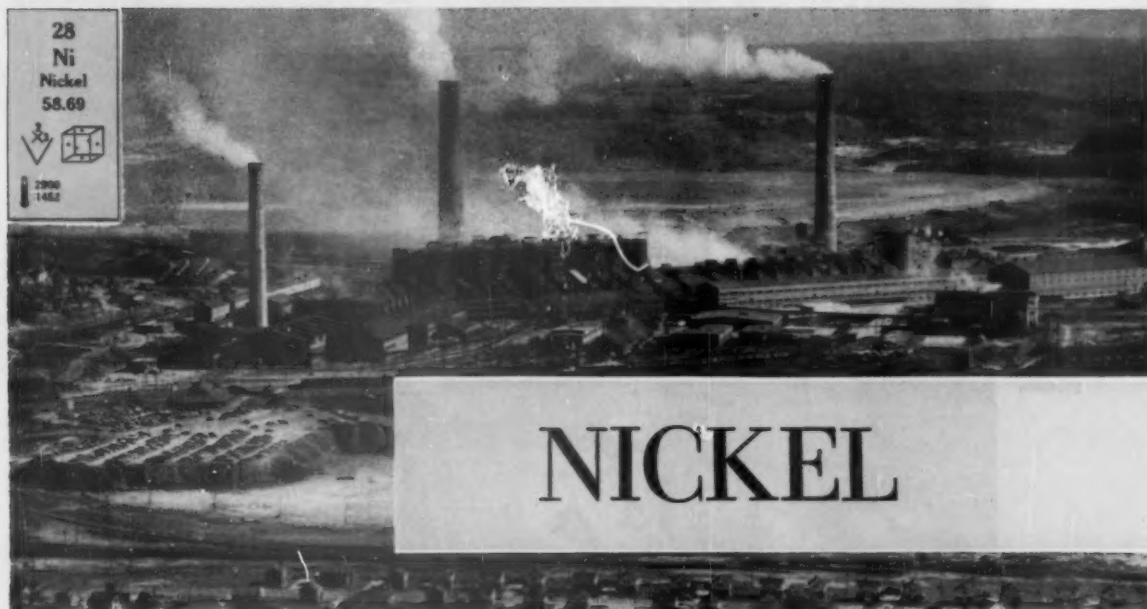


CONOVER,  
NORTH CAROLINA

### Warehouses in:

Chicago • Conover, N. C. • Detroit  
Greenville, Ala. • Los Angeles  
New York (Paterson, N. J.)  
Oklahoma City • Portland, Ore.





# NICKEL

**T**HE PROBLEM for nickel: to convince P.A.'s that there's enough. Purchasing executives are fully aware that nickel has been coming out producers' ears for more than a year. But P.A.'s are playing it safe. Whenever they think about increasing their use of nickel-containing metals, the old shortage scars begin to throb.

Ever since Korea, many nickel users have been forced to rely to a great degree on substitutes. Some of these companies are going to be hard to win back. But the fact remains: *nickel will be in oversupply during the next four or five years at least.* Bets are off in event of a war, of course, as would be the case with almost any other basic commodity.

### Behind the Market Shift

The change that has taken place in the nickel market in the last two years is similar to the change in other metals—only more so. Early in '57 the lead-time on nickel mill products was 18 months. By the end of the year, all you had to do was whistle.

What happened? Mainly this:

- The defense take was drastically reduced. (This in part reflects the changeover from jets to missile-defense).
- The government rather suddenly began diverting to industry all the nickel earmarked for the stockpile.

● Then came the general slowdown in metal-working activity that started in the last half of '57. Add to this the fact that nickel users—sensing the end of the shortage—began to live off their once jealously hoarded inventories.

● Further weakening the market was the record production of 490 million pounds of nickel in '57—nearly 10% more than was turned out the previous year.

That was the picture going into 1958. The same trends continued. As a result, free world consumption this year is expected to total only about 330 million pounds—a sharp 20% drop from 1957. It means the nickel industry (60% of which is the International Nickel Company of Canada, Ltd.) was operating at only two-thirds capacity this year.

### Expansion Plans

For the future—and this is particularly encouraging to P.A.'s—the outlook is for free world capacity to increase almost 24% between now and the end of 1961. Biggest chunk of this increase will be Inco's 75-million pound-per-year Thompson Mine in Manitoba, Canada. Limited production from this facility is expected to start in 1960.

If all the announced expansion plans are carried out, free world capacity at the end of 1961 would be around 690 million pounds. How-

Production Molding  
Line in Magnesium  
Division



Grinding and Rotary  
Filing in Magnesium  
Division



The WILLIAMS Co.

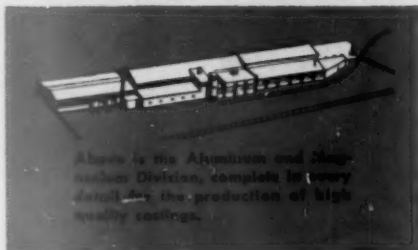
### Quality Control

ZYGLO  
Inspection

X-RAY  
Inspection

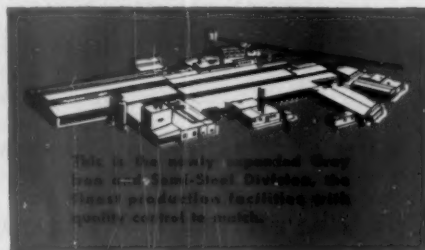
Zygro and X-Ray  
Inspection Service

*production facilities for* **ALUMINUM and MAGNESIUM**  
**sand, shell and permanent mold castings UP TO 25 LBS.**  
also Iron and Semi-Steel Castings UP TO 100 LBS.



Shown is the Aluminum and Magnesium Division, complete in every detail for the production of high quality castings.

- three modern plants
- skilled personnel
- a fine reputation



This is the newly expanded Iron and Semi-Steel Division, the finest production facilities with quality control to match.

The WILLIAMS Co.

RAVENNA, OHIO

More than a century of foundry experience

## Special Industry Report:

ever, with the market softening, it appears unlikely that all of the expansion projects will be carried out.

In line with this, H. J. Fraser, president, Falconbridge Nickel Mines, Ltd., recently said that he thought only about half of the increase in nickel capacity slated for the next few years would actually materialize unless the market firms considerably. Asked to elaborate on his analysis of the nickel market outlook, Mr. Fraser's reply was an enigmatic "No comment."

What it boils down to for the P.A. trying to evaluate the supply outlook is this: there will be steady increases in nickel capacity during the next three years. In 1961, free world production capacity should be roughly twice this year's total consumption figure. This means there could be a tremendous increase in nickel use without straining supply in the slightest.

In an interview with *PURCHASING Magazine*, Gus Wadsworth, assistant purchasing agent, Allegheny Ludlum Steel Corporation, Pittsburgh, one of the nation's best-informed nickel buyers, sized up the nickel outlook this way: "Supplies are ample—way above what we'll need. I wouldn't recommend anyone's laying in a big inventory. So far as price is concerned, it doesn't look to me as though there will be an increase. Depending on the outcome of the strike at Inco, there's a possibility of a price hike, but I doubt it."

Also talking about prices, Inco Vice-President Albert P. Gagnebin said: "We foresee no change." This statement was made before the aluminum producers put through their 6-month price freeze so it makes the prospect of stable nickel prices even stronger.

### Where Nickel Goes

The coming year will see nickel producers struggling even harder with what, for them, is a new job: to sell. They will be out to recapture some of their lost markets and to expand what they have. Based on 1958 consumption, nickel's markets shape up this way: stainless steel, 28%; engineering alloy steel, 16%; nickel specialty alloys, 16%; foundry products, 15%; electroplating, 14%; copper and aluminum-base alloys, 6%; miscellaneous, 5%.

As these figures show, nickel's future is closely wrapped in stainless (65% of all stainless steels contain nickel). This puts nickel in a good position for the future because stainless output has doubled every 10 years for the last 30 years. There have also been some hard-to-substantiate

rumors that a new technological development is in the offing which could mean an important increase in the use of stainless.

In what is definitely a sign-of-the-changed-times move, Inco is starting a stainless steel promotion in February. Aimed at the consumer market, the program will stress stainless, with a low-pressure plug that "nickel makes stainless perform better, longer . . ."

Generally speaking, nickel's best chances for growth seem to be in:

**Construction and construction machinery**

**Consumer goods**

**Plating applications**

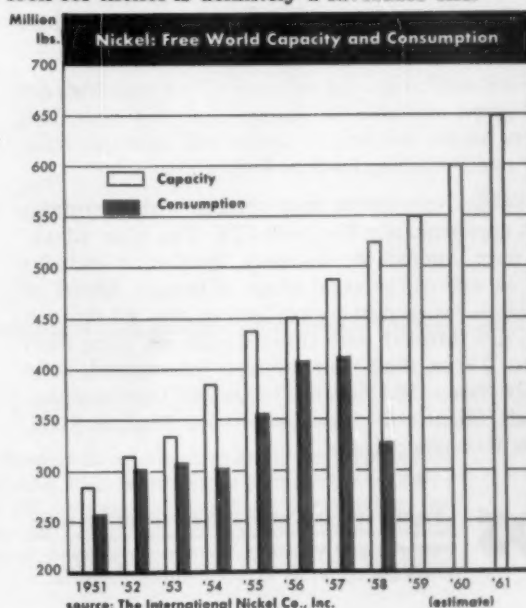
**High temperature, high pressure applications.**

Not important from a volume standpoint yet, but with definite potential, is the powerful, long-life nickel-cadmium battery. Several airlines are switching over to this type, and the battery has been widely used by the Air Force.

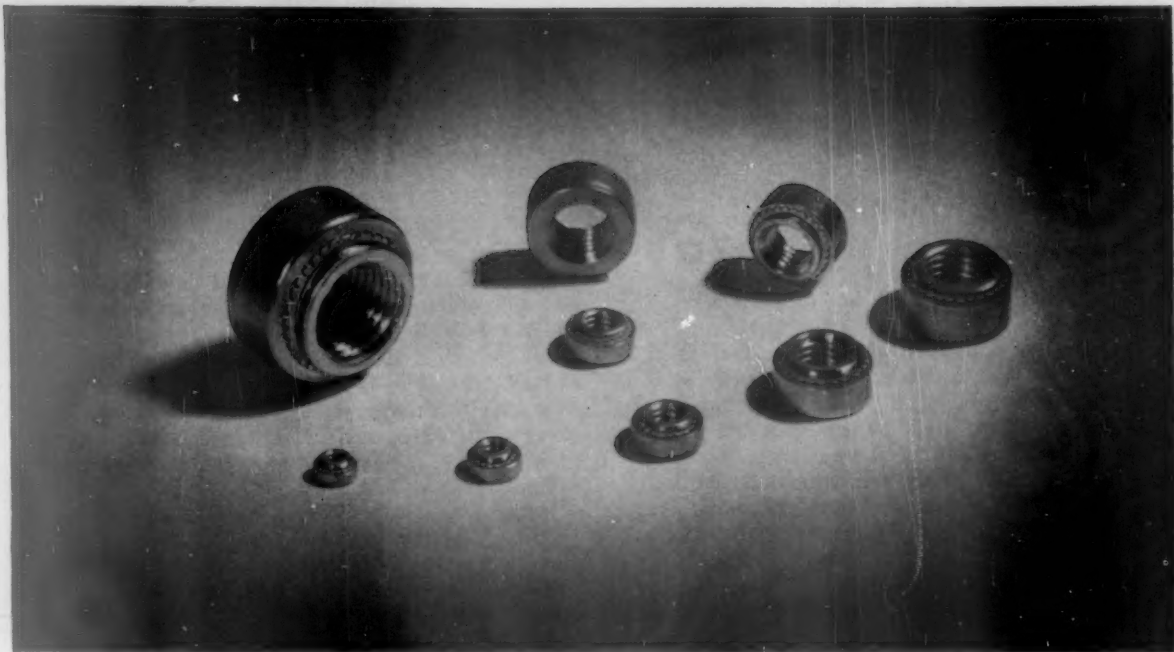
Another recent development is the use of nickel oxide to prevent yellow paints from fading. Largest market for the nickel-base pigments will be in house paints and masonry finishes.

### Outlook Is Favorable

There's no doubt nickel has a tough job ahead. For it has to both dispel shortage fears and convince users that its relatively high cost is more than compensated for by its performance. But, despite the rough road ahead, the long term outlook for nickel is definitely a favorable one.







New SPS Swage Nuts can be installed quickly and easily in a wide range of sheet metals, including steel, without use of special tools or dies. They provide handy tapped holes in thin-section assemblies, aid in blind fastening.

## New SPS Swage Nuts help you cut costs of fastening to sheet metal

SPS Swage Nuts offer you a fast, economical means of putting load-bearing threads in thin metal. Unlike similar fasteners, they require no special tools, can be installed with a press fitted with flat dies. Further, they do not discolor, deform or buckle the metal in which they are mounted. And they do not project from the opposite side of the plate, a design advantage where minimum clearances are involved.

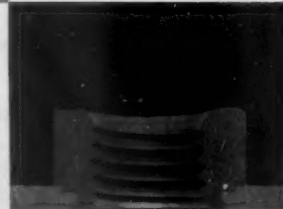
Push-out and torque-out values of SPS Swage Nuts are the highest available for fasteners of this type. This insures proper torquing of screws and increases reliability under working loads and vibration.

SPS Swage Nuts can be used in metal with a hardness up to approximately Rockwell C25. This is an advantage over comparable fasteners, because it includes steel, as well as the usual alloys of copper, Monel or aluminum. Swage nuts are available in sizes #2 through 1/2 in. (2B threads), with shank lengths for plate from .020 to .250 in. thick. For complete information, write for new Swage Nut bulletin (Form 2447) and samples. Aircraft/Missiles Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



**Step 1.** Enlarged cross-section shows #8-32 SPS Swage Nut inserted in hole ready for swaging into plate. Ordinary hydraulic or pneumatic presses—even portable rivet setters—serve satisfactorily as installation equipment.

**Step 2.** Pressure displaces metal around edge of hole, forcing it into retaining groove. Swage ring knurls increase resistance to torque-out, also provide relief for metal flow. Note smooth surface on bottom of plate.



### HIGH RELIABILITY

SPS research is continually developing fasteners with higher standards of predictable performance. By installing SPS high-reliability fasteners in your assemblies, you increase overall product reliability.

For more information on the full meaning of reliability, write for a copy of the new SPS booklet "High Reliability."

**SPS**

**Jenkintown • Pennsylvania**

Standard Pressed Steel Co. • The Cleveland Cap Screw Co. •  
Columbia Steel Equipment Co. • National Machine Products Co.  
• Nutt-Shel Co. • SPS Western • Standco Canada Ltd. •  
Unbrako Socket Screw Co., Ltd.

For More Information Write No. 162 on Inquiry Card—Page 32

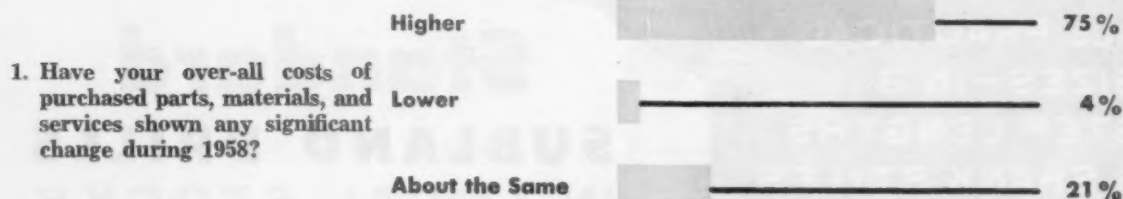
PURCHASING



# PURCHASING OPINION

## Will the Inflation Problem Become More Serious?

Purchasing executives, who have been fighting inflation for 20 years, have seen prices rise at an average annual rate of less than 2%. Now, however, there is a strong fear that prices will continue rising at more than double this average rate. We asked a representative group of purchasing men their opinions about inflation and the 1959 price outlook. Their combined answers follow.



3. Which economic forces do you think will be most important in pushing up prices in 1959 and which do you think will be least important?

Union wage demands and higher basic material costs were cited as the two most important forces in raising prices in '59. The end of inventory liquidation, increased demand for goods, and government deficit spending were suggested as being least important.

# NOW

FOR  
DRILLING and  
CHAMFERING  
PRIOR TO  
TAPPING

**IMMEDIATELY  
AVAILABLE—**

ALL PRACTICAL  
SIZES—IN 3  
STEP LENGTHS  
3 SHANK STYLES



SHORT



MEDIUM



LONG

With Straight Shank, Tapered Shank, or  
Jobbers Length



Just off the press! This new 12-page Catalog illustrates the multiple advantages of Drilling and Chamfering (prior to tapping) with Mohawk Standard Subland Drills. Lists all practical sizes, types and suggests a simplified method of determining your requirements—more economically. Yours for the Asking!

*world's largest producer of Sublands*

## Standard SUBLAND DRILLS IN LOCAL STOCKS

Now . . . Mohawk Subland Drills are manufactured in all practical standard sizes, in 3 step lengths and 3 shank styles—to meet all drilling-chamfering requirements. And, Mohawk Standard Sublands sizes match accepted industry practice on unified thread sizes, hole tolerances, etc.

Why? Because Mohawk Standard Sublands affords a faster, more accurate, economical method of simultaneously drilling and chamfering clean, concentric holes for better tapping operations—plus a saving in tap costs.

Mohawk Standard Subland Drills are available direct from your local distributor's stock—immediately! Start saving production time and equipment dollars today. Call the Mohawk man right now!



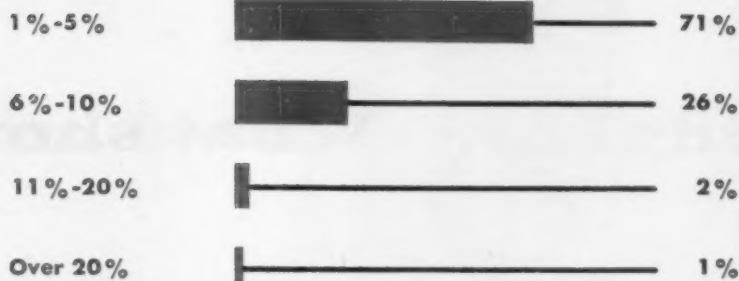
MONTPELIER, OHIO

For More Information Write No. 163 on Inquiry Card—Page 32

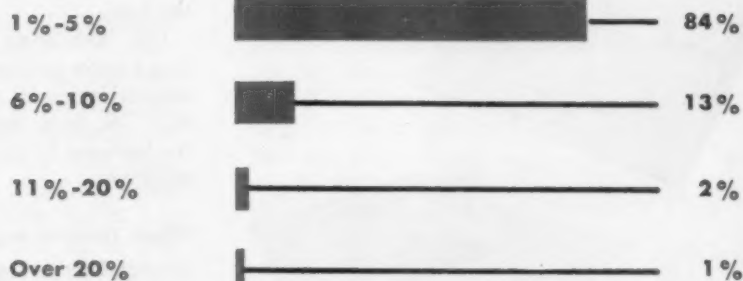
PURCHASING

## Purchasing Opinion

4. What percent increase do you anticipate in your purchase costs in 1959?



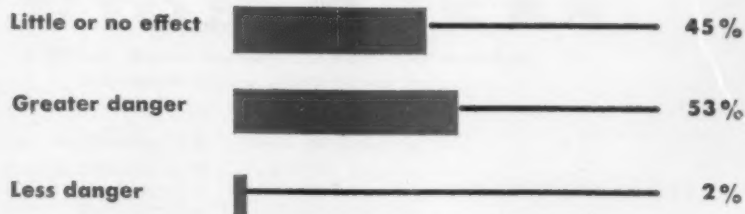
5. What has been your percent increase in 1958?



6. Do you agree with those who believe that the problem of inflation is more serious now than at any other time in recent history?

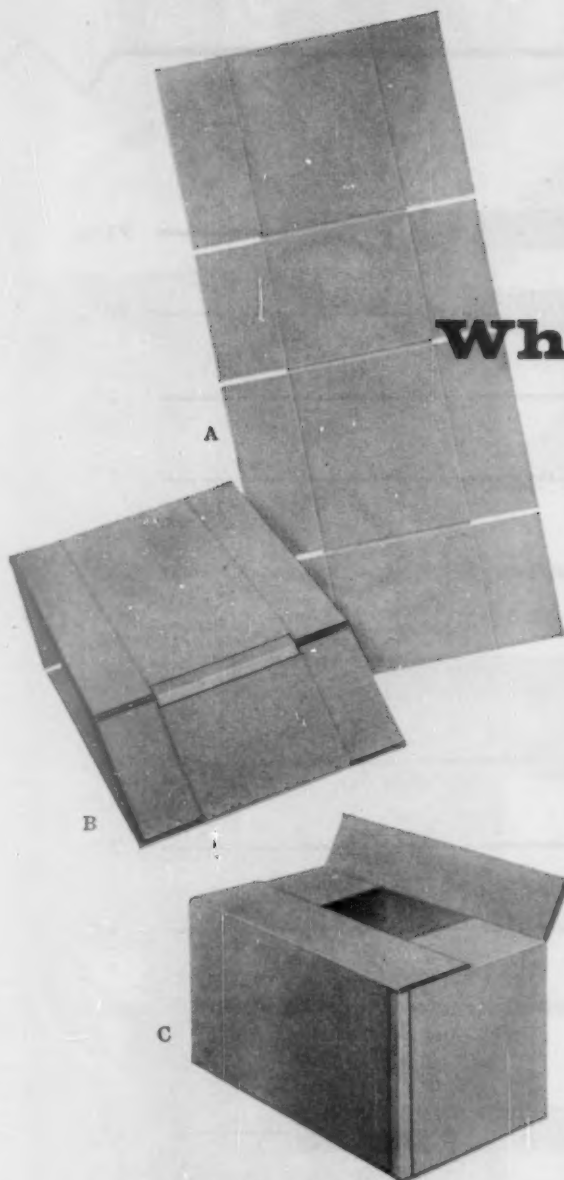


7. What effect, if any, do you feel the recent election will have on the inflation threat?



*What you should know about*

## What should a box



A. Scored and slotted sheet  
B. Folded and taped  
C. Assembled box

The "creases", or scores, on corrugated boxes facilitate folding. When straight, and properly formed, they make your packing job easier and faster, assure maximum strength and serviceability of the box.

But just being straight isn't enough. Too narrow or too shallow a score sets up internal stresses, makes the box hard to fold. Too deep, weakens the board, makes the fold easy to tear and come apart during shipment.

### What makes a perfect score?

It depends largely on the thickness and type of board, the scoring process, what you are shipping, and



Scoring the sheet

how it is shipped. First, the score must fold without cracking the board. It must also fold straight, regardless of the direction of the corrugations. It must not cramp the inner liners too much when folded at 180°. And it must, under test, withstand



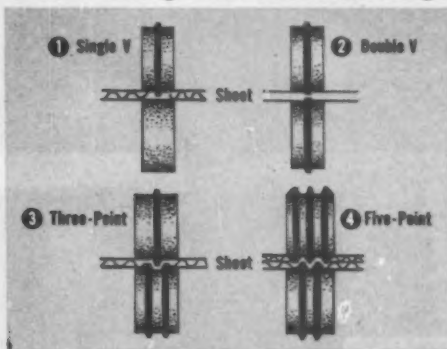
## scoring and slotting of Union Boxes

# "crease" be...besides straight?

combined tearing, bending and tension forces simulating those it will meet in actual service.

### The different kinds of scores

There are four basic methods of scoring corrugated board. 1. The "Single V" crease—most commonly used when the direction of the score is parallel to the corrugations. 2. The "Double V"—generally used *across* the corrugations and where a clean, good-looking fold is essential. 3. The "Three-Point" crease—good both "with" and "across" corrugations. Used where high



tearing strength is paramount. And 4., the "Five-Point" crease. This, too, scores both ways. It is used almost exclusively for double wall board.

### The importance of slotting

Slots, cut by razor-sharp knives, form the top and bottom flaps of your corrugated box. Each slot must cut to an exact width, and at right angles to the flap scores so that the folded flaps will be perfectly parallel where they come together. The knives must cut a clean slot, without ragged edges or "lint". Improper slotting can seriously impair the appearance and protective qualities of your finished box.



At Union, slotting and scoring of corrugated containers is an exact science. It's one small part of Union's complete structural design service to assure you maximum product protection. It's one of the reasons why Union-engineered boxes are used consistently by shippers in every industry.



Write for Union's free, informative booklet "Manufacturing Sheets for Corrugated Boxes."

## UNION BOXES

UNION BAG-CAMP PAPER Corporation  
233 BROADWAY, NEW YORK 7, N. Y.

**Factories:** Savannah, Ga.; Trenton, N.J.; Chicago, Ill.; Lakeland, Fla.

**Sales Offices:** Eastern Division—1400 E. State Street, Trenton, N.J.  
Southern Division—P.O. Box 570, Savannah, Ga.; P.O. Box 454, Lakeland, Fla.  
Western Division—4545 W. Palmer, Chicago, Ill.

# When you buy from U. S. Steel



## **STEEL + PLUS IN ACTION: FACILITIES**

You're looking at the largest lock-coil cable in the world. It was specially designed and built by U.S. Steel's American Steel & Wire Division for the main tramway used in construction of the Glen Canyon Dam in Arizona. Construction crews have nicknamed it "the main gut," because it will carry the concrete and steel that are placed in the dam. The cable is four inches in diameter, has 312 individual steel wires and weighs 38 lbs. per foot. It took complete manufacturing facilities and know-how to produce this unique construction link.

## **STEEL + PLUS IN ACTION: TECHNICAL ASSISTANCE**

When Blaw Knox Company made nose plates for open-grate stair tread, they cut sections from flat plates and bent them into shape—an operation that often cracked the plates and left them for scrap. U.S. Steel offered a special angle section with a raised tread *already rolled* on the top side. This eliminated shearing and forming operations and stopped the scrap waste. The new nose plates are simply cut to length and welded to the grate—at a substantial saving in fabrication and steel costs.



you get

# STEEL+PLUS



## STEEL+PLUS IN ACTION: MARKETING ASSISTANCE

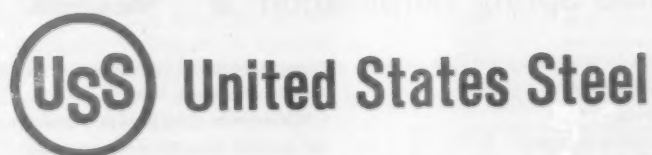
Sales of major appliances were never very high during the Christmas selling season—until 1954 when U.S. Steel launched the first annual Snowflake promotion. Since then, Christmas-time appliance sales activity has climbed steadily as a result of this newspaper, magazine, radio, and TV campaign to promote major appliances as Christmas gifts. Hundreds of retailers and manufacturers have used the Snowflake campaign as a master plan. They built their own promotion program around it, using sales kits and aids provided free by U.S. Steel.



## STEEL+PLUS IN ACTION: RESEARCH

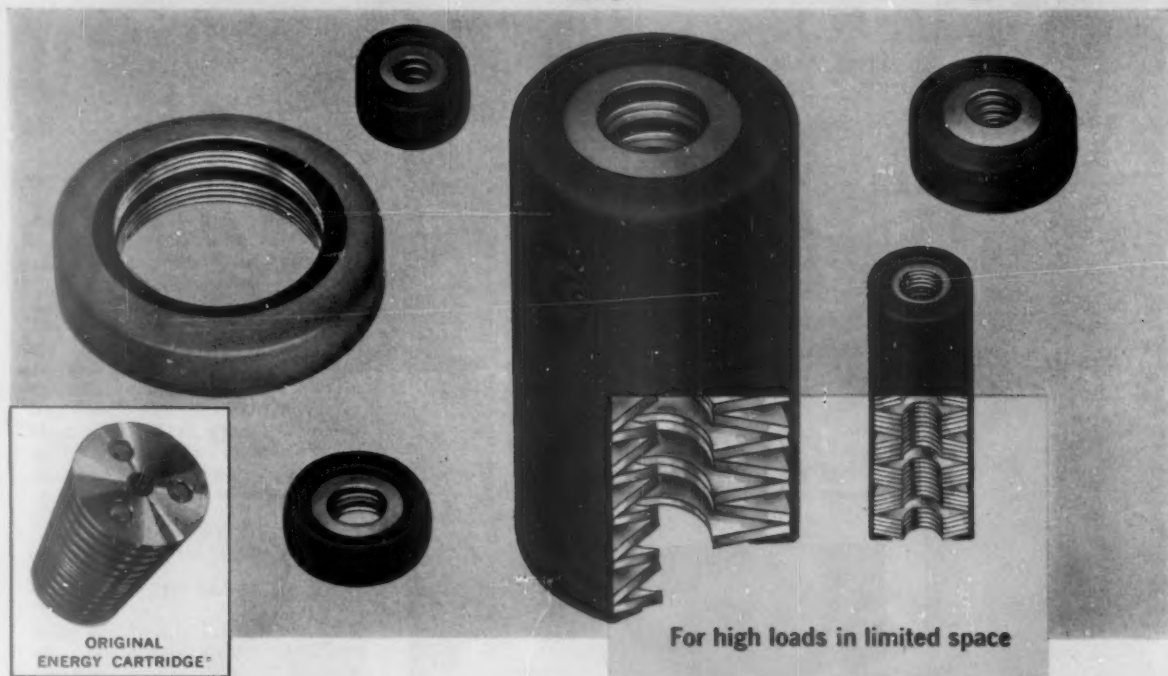
With an electrical current, this emission spectrograph vaporizes samples of metal. The emitted light spectrum is analyzed to reveal the exact amount of the important elements present in the sample. This type of test on the strip used for tinplate helps U.S. Steel research teams maintain the consistent high quality of tinplate, and guarantees top protection for products packed in steel cans. *USS is a registered trademark*

American Bridge • American Steel & Wire and Cyclone Fence • Columbia-Geneva Steel • Consolidated Western Steel  
National Tube • Oil Well Supply • Tennessee Coal & Iron • United States Steel Homes • United States Steel Products  
United States Steel Supply and Gerrard Steel Strapping • Universal Atlas Cement • United States Steel Export Company



For More Information Write No. 165 on Inquiry Card—Page 32

# ANNOUNCING... **Flexi-Pak** ELASTIC-COVERED\* Energy Cartridges\*



For high loads in limited space

Preambled belleville spring washers are now available in elastic-covered units in addition to those held together by rivets. Known as Flexi-Pak, molded coverings of rubber, neoprene, or other elastic material can be applied with the washers under tension, or latex coating can be applied under no-load conditions. In either case, washers form integral spring units for applications involving heavy loads in limited space.

Designed for use on washers with narrow walls, or where there are clearance restrictions, the elastic covering insures correct installation or removal of the washers assembled in any sequence. (See cutaway

illustration above.) This is especially important where washers are stacked in varying sequence.

As a companion to the previously announced Energy Cartridge held together with rivets or pins through the neutral axis, the elastic-covered units add to the versatility of this increasingly useful type of heavy-duty spring for stripper or die use, machine mounts and drives, constant-force applications, etc.

A.S.C. Divisions are ready to help you use this versatility to advantage with Energy Cartridges tailored to your needs. For more information, write for "Flexi-Pak" folder.

\*Patents—Energy Cartridge—U. S. #2,482,449  
Elastic-Cover—U. S. #2,432,717

## Associated Spring Corporation



General Offices: Bristol, Connecticut

Wallace Barnes Division, Bristol, Conn. and Syracuse, N. Y.  
B-G-R Division, Plymouth and Ann Arbor, Mich.  
Gibson Division, Chicago 14, Ill.  
Milwaukee Division, Milwaukee, Wis.  
Canadian Subsidiary: The Wallace Barnes Co., Ltd., Hamilton, Ontario and Montreal, Quebec

Raymond Manufacturing Division, Corry, Penna.  
Ohio Division, Dayton, Ohio  
F. N. Manross and Sons Division, Bristol, Conn.  
San Francisco Sales Office, Saratoga, Calif.

Seaboard Pacific Division, Gardena, Calif.  
Cleveland Sales Office, Cleveland, Ohio  
Dunbar Brothers Division, Bristol, Conn.  
Wallace Barnes Steel Division, Bristol, Conn.

5834

For More Information Write No. 166 on Inquiry Card—Page 32



## Washington Report

### ● U.S. Firms Stirred By Common Market

**T**HE pulse of foreign trade is quickening. After a year of slowing down, the pickup in the last several months looks like a prelude to a steady climb.

Biggest new factor that will be injected into our trade with Western Europe is the fact that, from a practical standpoint, the European common market is beginning to get teeth.

With the new year, the section of the Rome treaties setting up the common market takes on direct effects. Member nations begin dropping their tariffs against each other.

#### Huge population

U.S. companies that have hung back, waiting to see what happens, are starting to stir themselves in earnest. Many are coming to realize that member nations of the common market—France, Germany, Italy and the Benelux nations—comprise a population larger than that of the U.S.

The United Nations economic forecast is for Western Europe to increase consumption of materials and goods at a fantastic rate over the next decades. As an example, the rate of aluminum imports by Western European nations is likely to increase by four to five times the present rate by 1975.

#### Problems for P.A.'s

For the purchasing agent in U.S. industry, the common market raises a couple of basic questions:

1. How will the plan affect Western Europe as a source of supply?

2. Will there be an increase in the trend of U.S. companies opening branch plants in European countries—and how will this affect the whole purchasing pattern?

As a source of supply, Western Europe is likely to become an increasing source of expensive small parts for U.S. industry.

The common market will definitely tend to make Europe more self-sufficient. On the other hand, large single marketing units mean standardized products and mass production—which lend itself to the U.S. business approach.

#### Additional Incentives Desired

U.S. companies have been quietly extending their foreign branch operations in Western Europe—but according to our Government experts, not fast enough.

Department of Commerce officials have been siding with industry groups that feel some additional incentives should be offered to American businesses going abroad. What industry specifically wants is to avoid double taxation. Presently, taxes are paid to most foreign governments, and then additional taxes must be paid to the U.S. on net profits derived from off-shore operations.

Some companies have not needed too much incentive to invest in certain areas. Western Europe and other prime markets have attracted a number of U.S. manufacturers. But our government would like to see investment by U.S. industry in the undeveloped countries of the world.

U.S. investment in European industry hit the headlines recently, with the squabble between Reynolds Metals and Alcoa over a major ownership position in the largest English aluminum producing company—British Aluminum.

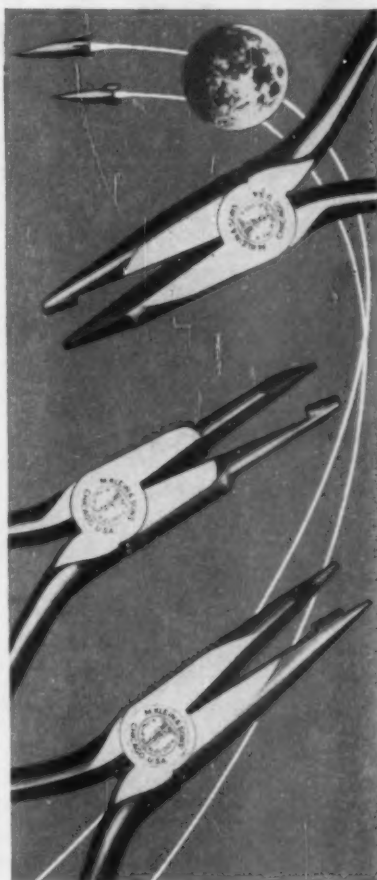
For some years, Reynolds has been looking around the world for interests in fabricating companies.

Reynolds' view is that markets abroad will blossom out, and that tariffs will be erected against manufactured goods—but not necessarily against raw materials.

Alcoa's big play for a British company indicates a similar approach. Although Alcoa seems to have won the first round in the British Aluminum fight, it is still too early to count Reynolds out completely. (Turn Page)

## 3 KLEIN PLIERS

to make electrical wiring easier



Three newly engineered Klein Pliers which will solve difficult problems in the wiring of electronic assemblies.

#### ALL-PURPOSE ELECTRONIC PLIER

Shear blade cuts flush and holds clipped end of wire—Requires no sharpening; will cut hard or soft wire. Smooth, continuous action prevents shock which may damage resistors. For bare wire up to 18 gauge. Patent pending.

No. 260-6—length 6½"

No. 260-6C—with coil spring that holds jaws open.

#### NEEDLE-NOSE PLIER

Similar to No. 260-6 but nose has been slimmed to permit use in confined areas. Patent pending.

No. 261-6—length 6½"

No. 261-6C—with coil spring to hold jaws open

#### PLIER WITH KNIFE AT TIP

Jaws behind blade hold clipped wire end. A shear-cutting plier that will cut hard or soft wire. Coil spring to keep jaws apart. Pat. No. 2,848,724.

No. 208-6PC—length 6½"



Write for Catalog 101-A, which shows the complete line of Klein Pliers, including 20 pliers recently developed.



For More Information Write No. 167  
on Inquiry Card—Page 32

# POWELL

world's largest family of valves



Fig. 1559—Steel Lubricated Plug Valve for 400 W.O.G.; ASA 150 and 300 Pounds. Screwed gland type.



Fig. 1793—Iron Body Bronze Mounted O.S. & Y. Gate Valve for 125 W.S.P. Solid wedge disc. Sizes under 8" can be supplied with double wedge disc.



Fig. 559—Iron Body Bronze Mounted Swing Check Valve for 125 W.S.P. Re grindable, renewable bronze seat and disc. Screwed end and All Iron valves available.



Fig. 1821—Bronze Solder Joint Gate Valve for use with copper pipe or tubing. Inside screw rising stem. Non-rising stem valves also available.



Fig. 3003—Steel Gate Valve for 300 W.S.P. Outside screw rising stem and yoke. Powell Steel valves are available for pressures from 150 through 2500 pounds.



Fig. 500—Bronze Gate Valve for 125 W.S.P. Screwed-in bonnet, inside screw rising stem. Solid or double wedge discs.

**FOR EVERY FLOW CONTROL PROBLEM** Powell offers more kinds or types of valves, available in the largest variety of metals and alloys, to handle every flow control requirement. Your local valve distributor will be glad to tell you all about them. Or write to us for the full facts.

**THE WM. POWELL COMPANY • Dependable Valves Since 1846 • Cincinnati 22, Ohio**

For More Information Write No. 168 on Inquiry Card—Page 32

## Washington Report

### • West Confused By Soviet Trade Moves

THE Soviet trade offensive is not an important factor in all this scratching around for world trade.

But this does not discount the Russians' real power as a trade threat. For the Russians move in with mixed motives. Sometimes their motives are simple trade considerations, while at other times the political effects are paramount. Soviet motives are so completely suspect, however, that even a normal market play raises immediate question of purpose.

When the British dumped their strategic stockpiles of copper, it was generally considered right and proper for them to do so. When the Soviets sold off aluminum, it was viewed as dumping.

The Russians are now moving into world markets on a large scale and can show up as a strong factor in the economy of any smaller country by concentrating their buying.

### • Bethlehem - Youngstown Ruling To Affect FTC

THE Federal Trade Commission considers the Federal District Court decision banning the proposed merger of Bethlehem Steel Corp. and Youngstown Sheet and Tube a basic guide in its daily operation.

Until the Supreme Court either affirms or denies an appeal—if an appeal is taken—the decision is the law. In addition to asserting that the proposed merger would lessen competition and tend to create monopoly, the decision went into considerable detail on marketing practices—which the FTC will now apply rather broadly. For the steel merger decision has great applicability to many other industries.

A significant part of the decision was the judge's reasoning that not only would the proposed merger tend to create monopoly, but it might set off further mergers by smaller companies.

A. N. Weckler

DECEMBER 22, 1958

# SEALMASTER



GIVES YOU ANOTHER

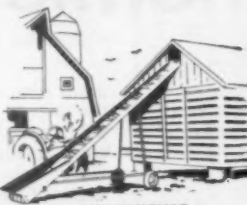
*FIRST-*

THE

**"LP"**



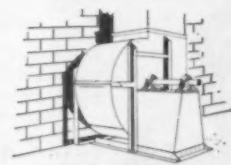
GENERAL MACHINERY



AGRICULTURE



MATERIALS HANDLING



AIR CONDITIONING

**A DEPENDABLE, HIGH QUALITY, HIGH STRENGTH, LOW COST, BALL BEARING UNIT!**

- Precision one piece unit. No extra assembly costs for you.
- Malleable housing provides maximum strength with light weight.
- Permanently sealed—pre-lubricated with high grade lubricant.
- Nothing of comparable value in low price field.

Available in following shaft sizes:  
 $\frac{3}{4}$ ",  $\frac{7}{8}$ ",  $\frac{15}{16}$ ", 1",  $1\frac{1}{16}$ ",  $1\frac{1}{4}$ ",  
 $1\frac{3}{8}$ " and  $1\frac{7}{16}$ ".

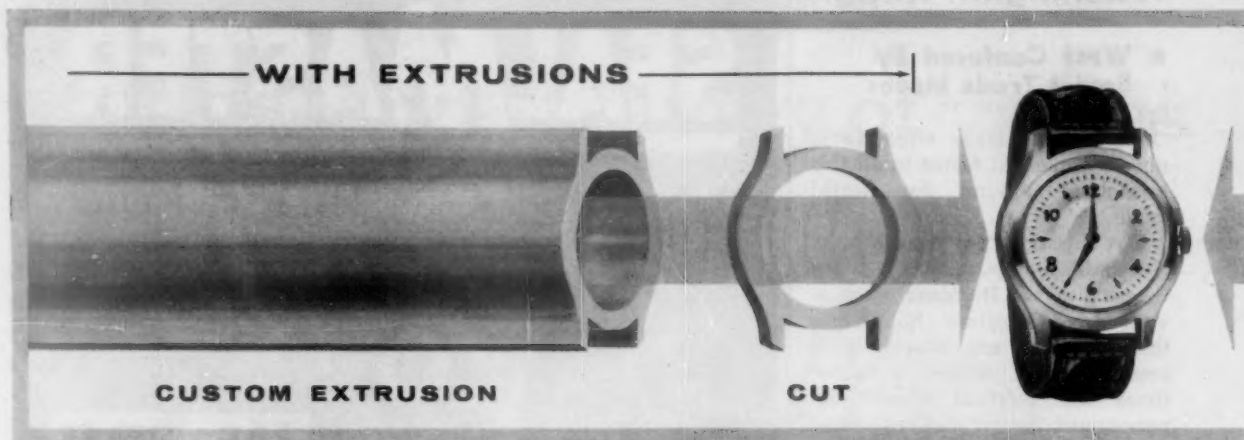
WRITE FOR BULLETIN 1058



NAME	_____
FIRM	_____
STREET	_____
CITY	_____ STATE _____

SEALMASTER BEARINGS A Division of STEPHENS-ADAMSON MFG. CO., 51 Ridgeway Ave., Aurora, Ill.  
 For More Information Write No. 169 on Inquiry Card—Page 32





NEW METHODS SAVE MANUFACTURING TIME. Simplified flow chart shows process

## New methods make COPPER more economical to use:

There are many manufacturing cost elements that are making copper, brass and bronze increasingly economical to fabricate. These include reductions in manufacturing time, reductions in scrap, and resale value of the limited scrap produced.

### Manufacturing Time Reduced

Machining time is frequently a more important factor in the end cost of a product than the cost of the material itself. The copper industry and the users of copper have developed many methods for reducing this cost.

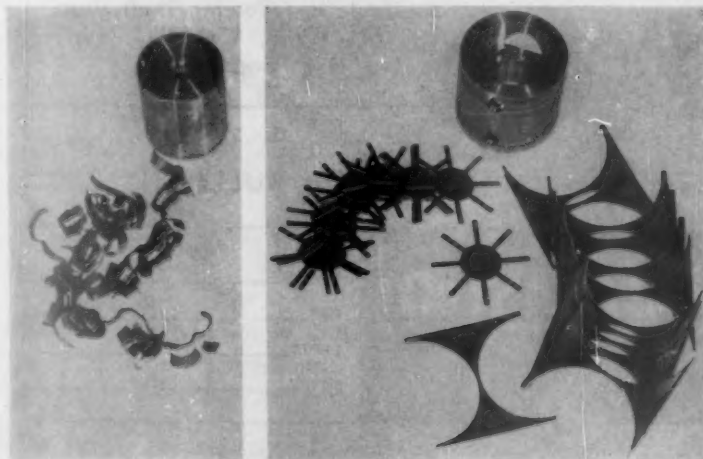
Custom extruding is among the most important of these methods. Extruded shapes are supplied by the brass mills to reduce the time and cost of machining by the customer

plant. For example, the watch case extrusion at the top of the page is supplied in lengths to the watch manufacturer who slices it to the desired thickness, ready for finish machining. These shapes would otherwise have to be formed out of solid brass bar stock at "considerably greater time and cost," according to the manufacturer.

### Scrap Reduced

Many of these processes, including custom extruding, also reduce the amount of scrap generated. While copper and copper alloy scrap are readily salable at good prices, reduction of scrap still results in important savings.

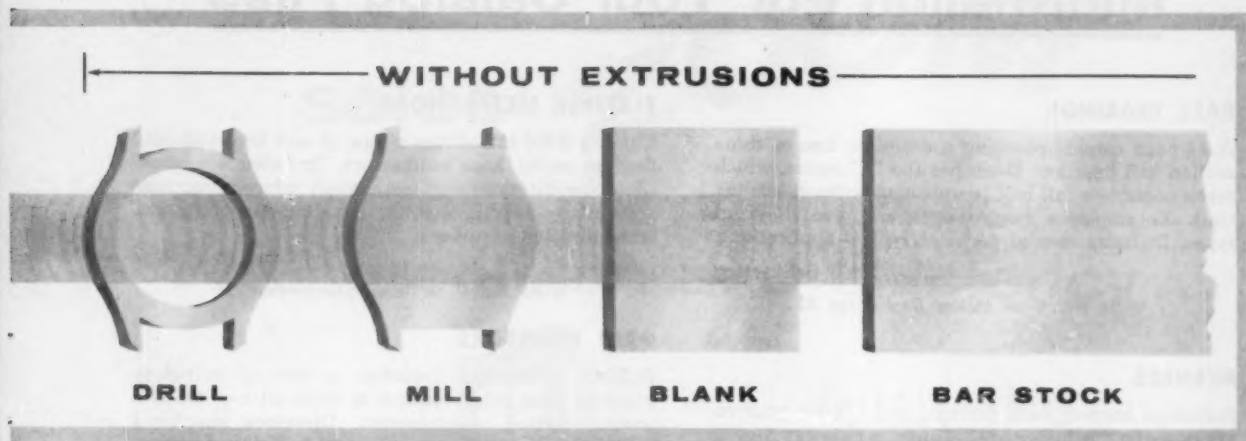
The recently developed process of cored forging, for example, is a one-step operation for forming parts with intri-



**BIG SCRAP SAVINGS** are result of copper's unique forming properties. Magnetron cavity at left produced as a cored forging leaves very little scrap, as shown. Old method using stacked laminations, right, was far more wasteful.

Photo courtesy Raytheon Mfg. Co.





eliminated in manufacture of watch back by use of brass custom extrusions.

cate and accurate cavities. Machining and drilling are greatly reduced, and scrap is often only a small fraction of that generated by conventional processes.

The electronic part shown on the opposite page was produced in this fashion. The entire amount of scrap produced is shown next to it. On the right is the equivalent part produced by conventional methods. Because of accuracy specifications, it had to be formed from stamped sheet copper. The stampings were then stacked and furnace brazed. Note the tremendous amount of scrap involved. The manufacturer estimates total savings of 90 to 95 percent in time and materials.

### Scrap Chargebacks

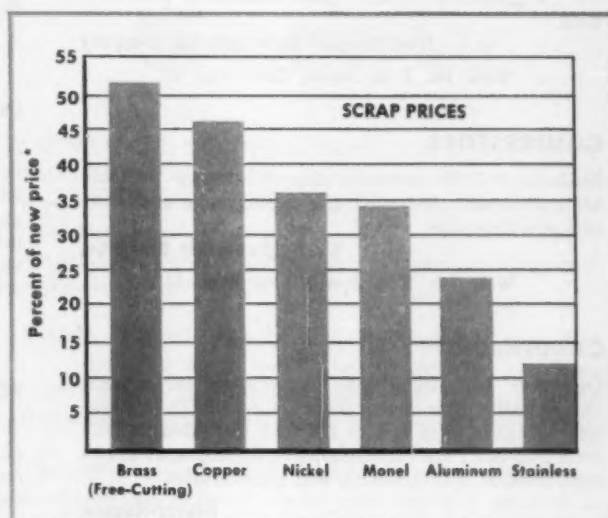
In spite of the continuing improvements in manufacturing efficiency, there will always be some scrap produced in the manufacture of parts from any metal. Here the copper metals offer another opportunity for manufacturing cost savings in the form of scrap charge-backs. The market for copper and copper alloy scrap is so good that 40 to 50 percent (or more) of the original cost of the metal scrapped can often be recouped. This ratio of scrap price to new price is higher for the copper metals than for any other common metal — even for those that cost more originally. Typical scrap vs. new price ratios are shown in the bar graph at the right. Notice that percentage-of-investment return for the copper and brass rod scrap is far above that for aluminum.

### Other Factors Affect Copper Use

In addition to the cost reductions we have just examined, there are, of course, other factors encouraging the greater use of copper and copper alloys. The recognized design and production advantages of these versatile metals continue to become more important as design standards become more rigorous in the face of increased competition.

Copper supply is important, too. There was a time, right after the war, when people worried about copper's long-term availability. The facts are reassuring. New mines are always being developed. At the current rate of consumption, the free world presently has a conservatively-estimated 50-year reserve of copper. This does not take into account inevitable new discoveries.

All these factors are stimulating greater use of copper and the copper alloys. The Copper & Brass Research Association will be happy to supply you with additional data to help you re-evaluate these metals for your own purpose. Just write CABRA, 420 Lexington Avenue, New York 17, New York.



**LESS DEPRECIATION** when you use copper. The copper metals have the highest ratios of scrap-to-new prices of any of these machinable metals.

\*Ratios derived from new prices for rod or bar, vs. scrap prices for rod turnings, as reported in published sources, 10/9/58. All figures are comparable.

*There's a new frontier in...*

**COPPER  
BRASS  
BRONZE**

# Information For Your Catalog Files

## BALL BEARINGS

A 24 page catalog covering a complete line of thin-section ball bearings. Describes the "T" series, which make possible a full ball complement without loading slots. Encompasses twelve sizes and five different types. Includes several pages of typical applications.

**Split Ballbearing**

Write No. 1 on Inquiry Card—Page 32

## BURNERS

Industrial burners with built-in fuel and air systems are described in folder 5807. Contains cutaway views, diagrams, dimensions, and photographs. Illustrates how the integral air register improves combustion and reduces installation costs by eliminating the need for an ignition arch and other underfloor construction.

**Iron Fireman Manufacturing Company**

Write No. 2 on Inquiry Card—Page 32

## COMPRESSORS

Bulletin P-121B describes the 365 rotary portable air compressor. Included are photographs and general specifications.

**Westinghouse Air Brake Co.**

Write No. 3 on Inquiry Card—Page 32

## CONDENSORS

Describes blow-thru type evaporative condensers, incorporating new design features. Available in capacities ranging from five to 110 tons. Included in bulletin P-F 511.1 are comprehensive dimensional drawings, general specifications, and photographs.

**Drayer-Hanson**

Write No. 4 on Inquiry Card—Page 32

## CONTAINERS (PLASTIC)

Describes printed and unprinted rigid plastic containers for packaging. Lists four major container categories: threaded, shoulder, shell, and beaded. Full-color illustrations are included.

**Lormer Plastics, Inc.**

Write No. 5 on Inquiry Card—Page 32

## CONVEYORS

Designs and dimensions for three new high temperature vibrating conveyors. Data catalog 700-HT-9 explains how the drive mechanism and conveying troughs meet the requirements of hot materials up to 1800 degrees Fahrenheit. With unrestricted contraction of the troughs, thermal stresses are not added to mechanical stresses of structural members or supporting coil springs.

**Carrier Conveyor Corporation**

Write No. 6 on Inquiry Card—Page 32

## FLEXIBLE METAL HOSE

Catalog #658 introduces a line of wet heat standard flexible metal hose connectors. Included are complete specifications and installation information. Also shown are flexible nipples, pipe, pump connectors, and vibration absorbers.

**Cobra Metal Hose**

Write No. 7 on Inquiry Card—Page 32

## GRID RESISTORS

Bulletin GEA-6858 describes a line of mill-duty punched steel grid resistors to meet all a-c and d-c power resistor requirements. Discusses simplified installation methods and lists key design features. Gives information on series and parallel connections, box dimensions, and mounting frame dimensions. Includes charts providing selection and application data.

**General Electric Company**

Write No. 8 on Inquiry Card—Page 32

## INDUSTRIAL TRUCKS

A 16 page color booklet called "Transporter Facts and Figures." Lists the operational features of a walkie-type truck suited for work in highly congested areas and for short hauls. Included are application photographs, types of pallets and skids used, power features, standard specifications, and attachments.

**Automatic Transportation Company**

Write No. 9 on Inquiry Card—Page 32

## POWER CABLE

A 152 page power cable manual, illustrated with photographs, charts, and diagrams. Has five basic sections, together with product information, and technical material. Contains easy-to-read tables of current carrying capacity for one, two, and three conductors.

**The Okanite Company**

Write No. 10 on Inquiry Card—Page 32

## POWER TRANSMISSION

Bulletin 3101 covers a complete line of sheaves, V-belts, pulleys, pillow blocks, and flange units. Complete description of all items, plus pictures to illustrate uses.

**T. B. Wood's Sons Company**

Write No. 11 on Inquiry Card—Page 32

## PRESSES

Bulletin 130-G describes open gap and column type high-speed hydraulic presses. They range in capacity from one to 150 tons, and can be used for forcing, straightening, trimming, molding, bending, and press-fit assembly operations. The 24 page catalog also contains engineering formulas useful in selecting the proper press for specific applications.

**Hannifin Company**

Write No. 12 on Inquiry Card—Page 32

sales **"ZOOM"**

when your product offers  
new precision and efficiency...

with the  
**Saginaw  
Screw**



The Warren C. Portman Company uses the Saginaw b/b Screw to smoothly and accurately raise and lower the camera carriage on its new titling, animation and special effects camera stand.

"WE'VE FOUND THAT THE SAGINAW SCREW IS A DEFINITE SALES FEATURE in our new special effects camera stand, where precision control and smooth operation is essential to 'Zooms' and other special motion picture effects," says Mr. Warren C. Portman, Warren Conrad Portman Company, photographic equipment manufacturers.

A more profitable sales picture can zoom into focus fast . . . when you do as the Portman Company has done: switch from a high-friction acme screw to the virtually frictionless Saginaw b/b Screw for greater Sales Appeal!

The truly amazing ability of the Saginaw Screw to convert rotary motion to linear motion with over 90% efficiency is saving power, space, weight and assuring smoother, more dependable performance in countless products from miniature electronic controls to giant production equipment.

Perhaps the Saginaw Screw can give your products that vital new Sales Appeal you're looking for right now. To find out, write or telephone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan —world's largest producers of b/b screws and splines.

Give your products  
**NEW SALES APPEAL...**  
switch to the

**Saginaw**



WORLD'S MOST EFFICIENT ACTUATION DEVICE

**ball bearing Screw**



## Picture of worker saving money

*She's helping cut inventory 50%  
with Steiner roll towels*

Here's why you can cut inventory costs and save warehouse space with Steiner Company *controlled* roll paper towel dispensers in your washrooms: Towel supply lasts longer because users take only amount they need. Means less inventory . . . ties up far less warehouse space. You need only half as much storage space because a case of any given size holds twice as many rolled towels as folded. You can cut your inventory as much as 50 percent with Steiner dispensers.

Put them in your washrooms on a trial basis and see how you save. Your local janitorial supplier or sanitary paper distributor can help you . . . there is no charge for the dispensers. For more information send in the coupon below.



### STEINER COMPANY

740 RUSH STREET, CHICAGO 11, ILL., DEPT. 12-C

Please send me free bulletins on Steiner controlled roll paper towel dispensers.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_ STATE \_\_\_\_\_

For More Information Write No. 172 on Inquiry Card—Page 32

## Catalog Files

### ROOFING AND SIDING

Lists four different corrugations, along with complete specifications, flashing details, and erection methods. Available in 22 colors, in addition to standard black, maroon, and aluminum. The multi-coat system gives a smooth, pin-hole free surface unaffected by temperature changes, industrial atmospheres, or the ravages of nature.

**Bowman Steel Corporation**

Write No. 13 on Inquiry Card—Page 32

### SLINGS

Cable-laid and rope-laid Safe-Guard slings are described. Lists specifications, load ratings, and standard fittings for sizes  $\frac{1}{4}$ " to  $1\frac{1}{2}$ " diameter. Bulletin 5886 shows how these slings are for applications where abrasion resistance is a first consideration.

**Macwhyte Wire Rope Company**

Write No. 14 on Inquiry Card—Page 32

### SOCKET SCREWS

A 28 page catalog listing socket shoulder screws, flat head, button heads, and dowel pins. Also shown is an expanded line of cold forged socket head cap screws. A feature of catalog #23 is a self-locking set screw selector chart, presenting over 1000 combinations of metals, locking actions, points, and suggested applications.

**Set Screw and Mfg. Co.**

Write No. 15 on Inquiry Card—Page 32

### TRANSFORMERS

A 32 page bulletin, catalog CT8-58 carries detailed listings of over 450 stock transformers for immediate delivery. Provides electrical and physical specifications on hermetically sealed transformers. Performance curves are shown for many units.

**Chicago Standard Transformer Corporation**

Write No. 16 on Inquiry Card—Page 32

### VALVES

Covers a line of bronze, globe, angle, check, gate, radiator, and specialty valves. In the 12 page catalog are found pressure ratings, recommended uses, features, and dimensions. Arranged with low and standard pressure valves of each type together for easy reference.

**Ohio Brass Company**

Write No. 17 on Inquiry Card—Page 32

PURCHASING



why  
make  
it  
the  
hard  
way  
?



Make it easy on yourself by selecting your abrasive requirements from CARBORUNDUM's new Catalog of NATIONAL STANDARDS. This is a simplified listing of *standard* grinding wheels, industrial specialties, and abrasive grain "Job-Engineered" to meet the majority of your metal-removal or finishing requirements. Easy selection and net prices are at your finger tips. Here, for the first time, is a quick-reference guide that will simplify your grinding wheel purchases. This forward step by CARBORUNDUM will pay off for you in more uniform product quality, improved performance, and prompt delivery.



specify "Job-Engineered"

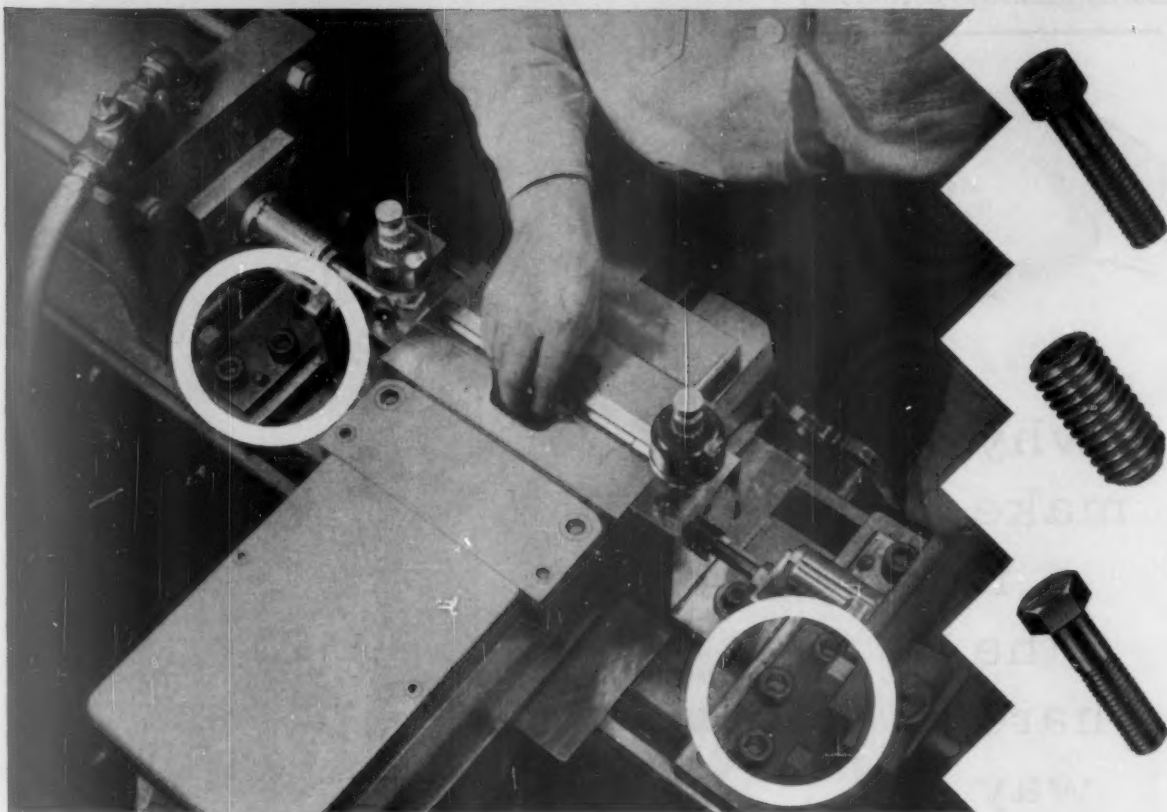
NATIONAL STANDARDS by

**CARBORUNDUM**  
REGISTERED TRADE MARK

WRITE FOR CATALOG OF NATIONAL STANDARDS, Form A-1489, and prove to yourself how "National Standards" can solve many of your abrasives problems. Address your request to The Carborundum Company, Dept. P 81-831, Niagara Falls, N. Y.



IT PAYS TO STANDARDIZE ON STANSCREW



## A 20-ton impact load ... 14,400 times a day! Stanscrew Fasteners solve the problem

Fastening the air cylinders on this tube former is a real problem. Each of these 8" bore cylinders delivers a thrust of over 20 tons every time the machine is operated. And since this happens 14,400 times in a normal working day, ordinary fasteners would soon fail under these repeated shock loads. Furthermore, not even the slightest misalignment can be tolerated in this machine.

The Stanscrew fastener specialist was able to quickly answer this demanding problem. His solution was Stanscrew Socket Head Cap Screws, tightened to within 80% of yield strength so they remained in tension. These fasteners, so applied, deliver a clamping force that eliminates the shock feature of this extremely high loading ... and provides a 100% factor of safety.

Tough assignments like this are everyday jobs for your Stanscrew fastener specialist. Immediately on call, through your Stanscrew distributor, he can bring to your problem years of specialized experience. And, back of him, is an outstanding staff of engineers who have been solving the fastener problems of American industry since 1872.

Stanscrew's complete line of more than 4,000 different types and sizes will provide economical answers to your fastener requirements. All 4,000 items are always in stock, quickly available.

*Call your Stanscrew distributor today for solutions to your fastener problems. He will arrange a prompt meeting with the Stanscrew fastener specialist ... who can often suggest ways to save you money by substituting standard fasteners for costly specials.*



**STANSCREW FASTENERS**

**CHICAGO** | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS

**HMS** | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT

**WESTERN** | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

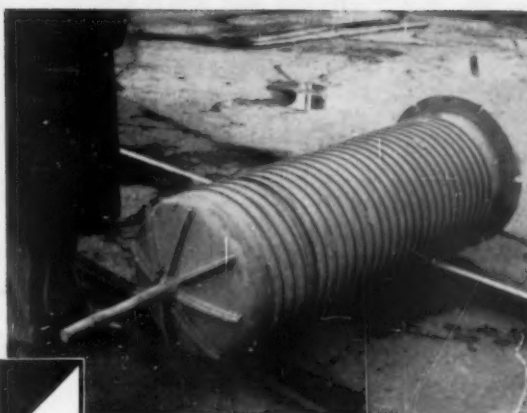
**STANDARD SCREW COMPANY**

2701 Washington Boulevard, Bellwood, Illinois

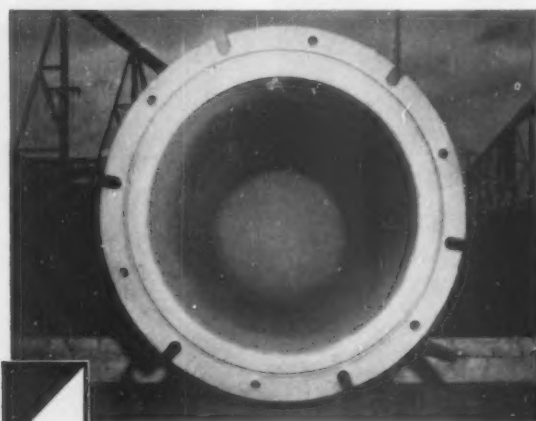
For More Information Write No. 174 on Inquiry Card—Page 32



23" Diam. Copper Crucible for Vacuum-Melting of Steel, completely fabricated and machined, ready for installation.



Copper Mold with Water-Circulating Ribs.



Copper Mold for Melting Titanium.



Welding Copper Ribs on Heads for Copper Crucibles.

**VACUUM MELTING CRUCIBLES BY**

**WELDCO**

**FOR TITANIUM AND ALLOY STEELS**

We have had extensive experience in making Copper Molds, Jackets, and Furnaces for Vacuum-Melting of Alloys. Progressive producers are boosting their quality sharply by using the Vacuum-Melting Process. Why not investigate the possibilities?

**THE YOUNGSTOWN WELDING & ENGINEERING COMPANY**

3805 OAKWOOD AVENUE

YOUNGSTOWN 9, OHIO

For More Information Write No. 175 on Inquiry Card—Page 32

# LOOKING FOR MORE FROM

For steelcutting . . . trim costs with Carboloy® Extra-Performance Grades 330, 350, and 370, and low-cost, General-Purpose Carboloy 78 and 78B carbides

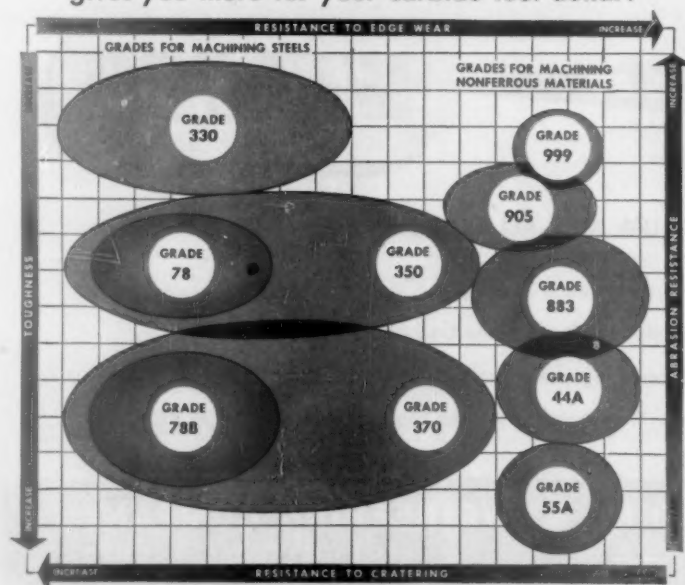
Some steelcutting jobs call for extra-tough, extra-performance carbides. Others can only be handled profitably with low-cost, general-purpose carbides. That's why we make them *both*.

Where you need increased machine productivity and have long production runs to keep cost-per-piece low—use Carboloy Extra-Performance Series 300 carbides. Their added strength and stamina handle jobs ranging from heavy roughing to high-speed finishing . . . at a unit cost and rate no "premium" carbide on the market can beat.

But, for general-purpose steelcutting jobs that don't require the Extra-Performance carbides, use Carboloy Grades 78 and 78B. Their top-notch performance, at low initial tool cost, will keep your machines operating profitably.

Chances are, your plant should be using *both* grades. Your local Authorized Distributor of Carboloy cemented carbides can deliver tools, blanks and inserts you need . . . in a hurry.

This complete team of Carboloy cemented carbides gives you more for your carbide tool dollar!





# YOUR CARBIDE TOOL DOLLAR ?

For nonferrous materials  
... boost production rates  
with Carboloy<sup>®</sup> cemented  
carbides performance-matched  
to your machining jobs

Aluminum, titanium, super alloys, wood—all have machining peculiarities that raise Cain with production schedules and tool costs. That's why we make *five* job-tailored Carboloy cemented carbides for cutting these materials.

With these five grades (see chart, at left), you can get the one with exactly the right combination of shock resistance and wear resistance to match your job—whether heavy, interrupted cuts, or precision finishing.

Because you're using performance-matched carbides with consistent metallurgical quality, you can schedule heavier production loads . . . and you will get this increased output at lower tool-cost-per-piece.

Your local Authorized Carboloy Distributor has complete stocks of tools, blanks, and inserts in these five grades. A phone call to him today will get your machines humming faster tomorrow.

*For more information on Carboloy Extra-Performance and General-Purpose carbides, or nonferrous material carbides, write: Metallurgical Products Department of General Electric Company, 11143 E. 8 Mile Street, Detroit 32, Michigan.*

**CARBOLOY<sup>®</sup>**  
CEMENTED CARBIDES

GENERAL  ELECTRIC

# CONTINENTAL

the  
number

1

DRILL

for

CONSISTENT  
UNIFORMITY

Every day in America's cost-conscious plants, Continental drills are proving their ability to produce a finer, cleaner hole and to last longer — up to 25% more production! Continental drills cost you less per hole!

## CONTINENTAL DRILL CORPORATION

555 W. Adams St., Chicago 6, Illinois

WAREHOUSES:  
NEW YORK LOS ANGELES YACOMA, WASH.  
75 Murray St. 2944 Tweedy Blvd. 2806 Center St.  
BA 7-4228 LO 7-4424 MA 7-3434

**FREE** 4 PERMANENT  
TIME-SAVING CHARTS

10

Continental Drill Corp., 555 W. Adams Street  
Chicago 6, Ill.

Send us FREE handy-form permanent charts  
checked below.

☐ Conversion Factors ☐ Drill Grinding Data  
☐ Cutting Speeds and Feeds ☐ Tap Drill Sizes, Dec. Equiv.

Co. Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Attention: \_\_\_\_\_

For More Information Write No. 177  
on Inquiry Card—Page 32

## Letters To The Editor

### TRANSPORTATION GUIDE

Thank you for the six copies of the "Buyer's Transportation Chart" which you so kindly furnished to us. It is our belief that this can be of considerable help to anyone who must make a fast decision on how an item should be shipped.

J. J. Sheehan  
Purchasing Agent  
Clark Bros. Co.  
Olean, New York

### COST OF PURCHASE ORDER

I noted with interest the letter published in the September 29 edition of PURCHASING Magazine from the purchasing agent of the A.P. Green Fire Brick Company relative to the cost of placing a purchase order.

While it is true that the cost of issuing a purchase order is not the best measure of purchasing efficiency, there is another pertinent factor which your reply did not touch upon. This factor is a consideration necessary to many small companies or municipalities and, this is, that the cost of placing additional purchase orders shall not outweigh the savings to be gained from the placing of such purchase orders.

Also, any purchasing manager who must request manpower and finances for the operation of his department, if he functions within a budget, should be well informed as to his cost of operation.

Harold Levy  
Assistant Purchasing Agent  
City of Antioch  
Antioch, Calif.

### INFLATION

It looks like inflation is going to be one of the country's biggest problems in the next few years. I certainly hope that P.A.'s are more astute economists than John Q. Public. For example, I haven't heard any large hue and cry from the public about a price increase in gasoline. And yet . . .

The gasoline truck drivers union [in Chicago] signed a contract calling for a 10 cent an hour

increase in wages. On the following day, the gasoline dealers announced that the price of gasoline would go up because of the wage increase. This is hard to believe.

Under the new contract, a driver will be paid \$1 more a day (10-hour day). Assuming that a driver hauls 10,000 gallons of gas each day, an increase of one cent in the retail price of a gallon of gas would bring the dealers \$100 more for every day this driver works, or 100 times the amount of his raise.

Even a price increase of one-tenth of a cent a gallon would bring the dealers a profit of \$9 per day (\$10 less the \$1 a day pay raise).

I believe in making a fair profit—but this is ridiculous! If P.A.'s don't study all the facts when they're handed some "automatic" increases then we're fast approaching a 20-cent dollar.

Name Withheld

● PURCHASING Magazine agrees that this is a potentially serious problem. Most of this issue has been devoted to the subject.

### LEARNING CURVE—VICE OR VIRTUE

The article, "The Learning Curve—Short Cut to Cost Reduction" in the September 20 issue of PURCHASING Magazine could well be titled, "The Learning Curve—Short Cut to Non-profitability."

Unfortunately, this curve suffers from the same statistical cancer that is inherent in most empirical exponential functions—extreme sensitivity to a small change in the basic empirically-determined constant.

The editorial box accompanying the article suggests that most learning curves are in the 60% to 90% range and gives the 80% curve as that most frequently used in the aircraft industry. The inference is, of course, that the most frequently used curve is safely on the high side to assure profitability to the vendor, safely

For More Information Write No. 178  
on Inquiry Card—Page 32→

PURCHASING



**UNERRING ELECTRONIC CONTROLS  
ASSURE ROLLER BEARING QUALITY  
NEVER BEFORE ACHIEVED IN QUANTITY!**

Ultra-precise control of internal diameters and clearances helps HYATT Hy-Rolls run smoother, last longer, prevent troubles due to excessive heat and vibration frequently generated by inferior bearings. *For maximum performance per bearing dollar, insist on . . .*

**HYATT** **HY-ROLL BEARINGS**  
FOR MODERN INDUSTRY

HYATT BEARINGS DIVISION • GENERAL MOTORS CORPORATION • HARRISON, NEW JERSEY

**NO BEARINGS** carry radial loads like cylindrical bearings . . .  
and **NOBODY** knows them like **HYATT**





Here's a cable supporting system with space reserved for future needs

## Cope cable trough gives your system room for growth!

Cope cable trough design gives you greater load carrying capacity per dollar now—plus built-in system expansibility that will minimize the cost of future system expansion. A single 24" wide section of Cope cable trough supports as many cables as 16 lengths of 4" conduit. Additional cables can be quickly and easily laid in existing trough as new equipment installations require. The lower first cost of a Cope cable trough installation saves you money a second time when you need to increase or expand your power distribution system!

**Reduced System Maintenance Costs.** Easy-to-get-at Cope cable trough also eliminates costly maintenance problems down the line. Once cable is laid in Cope expanded metal trough, it's readily accessible for easy inspection, repair . . . or re-routing when system

changes are required. And greater installation flexibility of lightweight Cope cable trough and a complete line of system accessories and fittings reduce design time up to 25% for laying out the most complicated system . . . assure easy system maintenance even in the most cramped quarters.

**Cut Costs Three Ways.** You save three ways when you specify Cope cable supporting systems with pin-type coupler . . . trough, ladder or channel.

- LOWER FIRST COST
- LOWER INSTALLATION COSTS
- LOWER SYSTEM MAINTENANCE COSTS

Discuss these advantages for your installation with a qualified Cope representative—or write to T. J. Cope Division, Rome Cable Corporation, Collegeville, Pa.

Cope sells exclusively through electrical wholesalers who specialize in materials and service for every electrical installation requirement. You can depend on them for fast service and competent advice.

**T. J. COPE** Division  
ROME CABLE CORPORATION

For More Information Write No. 179 on Inquiry Card—Page 32



## Letters

at the same time on the low side to protect the buyer from allowing excessive profits to materialize.

In the second problem of the article: if the 80% curve is used and an 85% curve is applicable, there goes the profit—and then some. What started out to be a 10% profit turns out to be a loss of \$3.50 on every \$229.00 sale, or 1.5%.

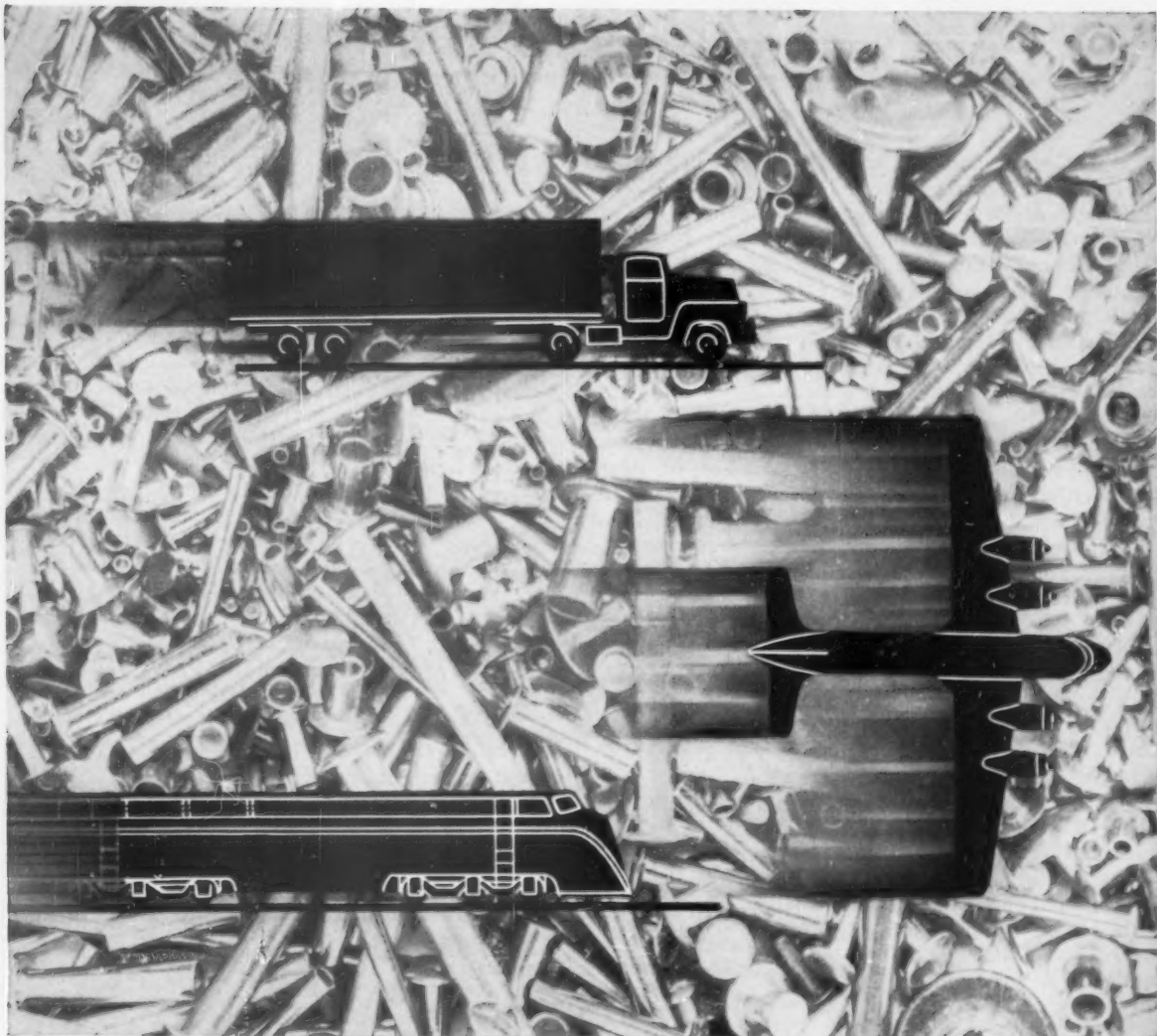
If the 80% curve is used and a 75% curve is applicable, profit increases to \$46.30 on every \$229.00 sale, or 20.0%. If there is a margin of error of as little as three to four points in arriving at the magic 80% curve, the corresponding margin of error in the selling price is of the same order of magnitude as the 10% profit.

The vendor asked to alter his pricing in accordance with a learning curve would be well advised to take with him to any discussions with the buyer a statistician at least as well versed on the subject as the buyer's cost analysts.

R. M. German  
President  
Fox Engineering Company  
Jackson, Michigan

• The calculations cited show that if the estimate of "which learning curve to use" is off by only 5% the effect on profits can be quite large. This is, of course, true. If the 80% learning curve is used and an 85% curve is applicable, the vendor will suffer a loss. And, if the 80% curve is used and the 75% curve is applicable, the vendor will make an extra profit. If either the 75, 80 or 85% curve is applicable and no learning curve—a 100% learning curve—is used, the effects on profits will be even larger than shown. And the effect on profits will be strictly one-way: the buyer takes a beating while the vendor takes extra profits. If the theory behind the learning curve is correct; namely, that as a vendor continues to make a certain item, he will become more efficient, then his costs should go down, and so should his price.





# NEW INVENTORY SYSTEM SPEEDS RIVET DELIVERIES

*Judson L. Thomson  
now keeps 500 million rivets  
in stock to meet  
your everyday needs*

This new system keeps our inventory high so *you can keep yours low*. It's based on the 800 most-used standard rivets. It's backed up by productive capacity exceeding 20 million rivets a day. When your order comes in, semi-finished rivets are quickly finished to your specifications . . . and delivery is geared to *your production schedules*.

Next time you need rivets, order from Thomson because . . .  
**TWENTY MILLION A DAY — SPEEDS RIVETS YOUR WAY.**



JUDSON L.

**THOMSON**

MFG. CO., WALTHAM 54, MASS.

39 Sawyer Rd.

# Purchasing People In The News

**J. R. Connell** has been appointed acting purchasing agent of The Babcock & Wilcox Company's Boiler division, Barberton, Ohio. Mr. Connell succeeds **W. C. Moulder**, who has been named to the staff of the vice president of the manufacturing department. In his new position, Mr. Moulder will assist on special work assignments.

In 1942, after nine years with the sales and metallurgical departments of the United States Steel Corp., Mr. Connell joined the purchasing department of B&W's Keystone Works in Alliance, Ohio. He was named assistant purchasing agent in 1949, and assigned to the Tubular Products division headquarters in Beaver Falls, Pa. Mr. Connell was transferred to the boiler division in Barberton, Ohio, as assistant general purchasing agent five years later. He is a member of the National Association of Purchasing Agents and the American Management Association.

Mr. Moulder joined B&W in 1913. He became purchasing agent in 1944, and was appointed general purchasing agent in 1953.

**Charles E. Anderson** was named manager of the purchasing planning division of the Standard Oil Company (Indiana), Chicago, Ill. Mr. Anderson succeeds **Lyle E. Schaffer** who recently was appointed division purchasing agent for the construction and equipment division. Mr. Anderson has been purchasing development manager since last year. He joined the company at its Whiting, Ind., refinery in 1947 as an inspection engineer in the manufacturing department and in 1952 moved to Chicago general office. He transferred to the purchasing department in 1954.

**Marvin B. Smith** has been appointed director of production programming and procurement for Chrysler Corporation's Airtemp Division, Dayton, Ohio. Mr. Smith joined Airtemp in 1941 as

a member of the planning department. In 1955 he was named director of the division's forward planning activities, and in 1956, assistant to the vice president-sales. In 1957 he became director of sales planning, the position he relinquishes to take over his new assignment.

**Reginald R. Burns** has been appointed director of purchases and **William M. Boardman** purchasing agent by Oakite Products, Inc., New York, N. Y.

Mr. Burns has been with Oakite for nineteen years. In his new



W. M. Boardman



R. R. Burns

position he will continue to be responsible for production planning, and will have charge of the company's purchasing activities.

Mr. Boardman joined Oakite in 1939, and has been assistant purchasing agent during most of the intervening years.

Esso Standard Oil Company, Louisiana Division, has announced the retirement of **Frank C. Walters**, division purchasing agent, at Esso's Baton Rouge Refinery. He is succeeded by **J. T. O'Brien**.

Mr. Walters started his career with the company as an engineer. Later he transferred to purchasing where, after various assignments, he became purchasing agent at Baton Rouge in 1951. His recent interests have been in the field of electronic data processing, as applied to inventory control and procurement. He has become a leading exponent of the benefits of automation in purchasing and, until recently, he was chairman of NAPA's committee on data processing. He will continue as a consultant to the committee in this field.

Mr. O'Brien joined Esso in 1934, and has spent much of his career in manufacturing operations. At the time of his recent promotion he was head of the Lube & Wax Department of the refinery's Petroleum Products Division.

**Henry R. Pongetti** has been named purchasing agent for Motorola Inc., Chicago, Ill. Mr. Pongetti joined the company in 1947 as an expeditor in the purchasing department. He was promoted to junior buyer in 1949 and advanced to chief expeditor three years later. From 1954 until his new appointment, he was assistant purchasing agent. Before coming to Motorola, Mr. Pongetti was with Stewart Warner.

Polaroid Corporation, Cambridge, Mass., has announced the appointment of **Herbert R. Pickering Jr.** as assistant purchasing agent. Mr. Pickering joined the company in early 1950 as a buyer of camera components. Before that he had previous assignments with Life Savers Corporation and Lever Brothers Company.

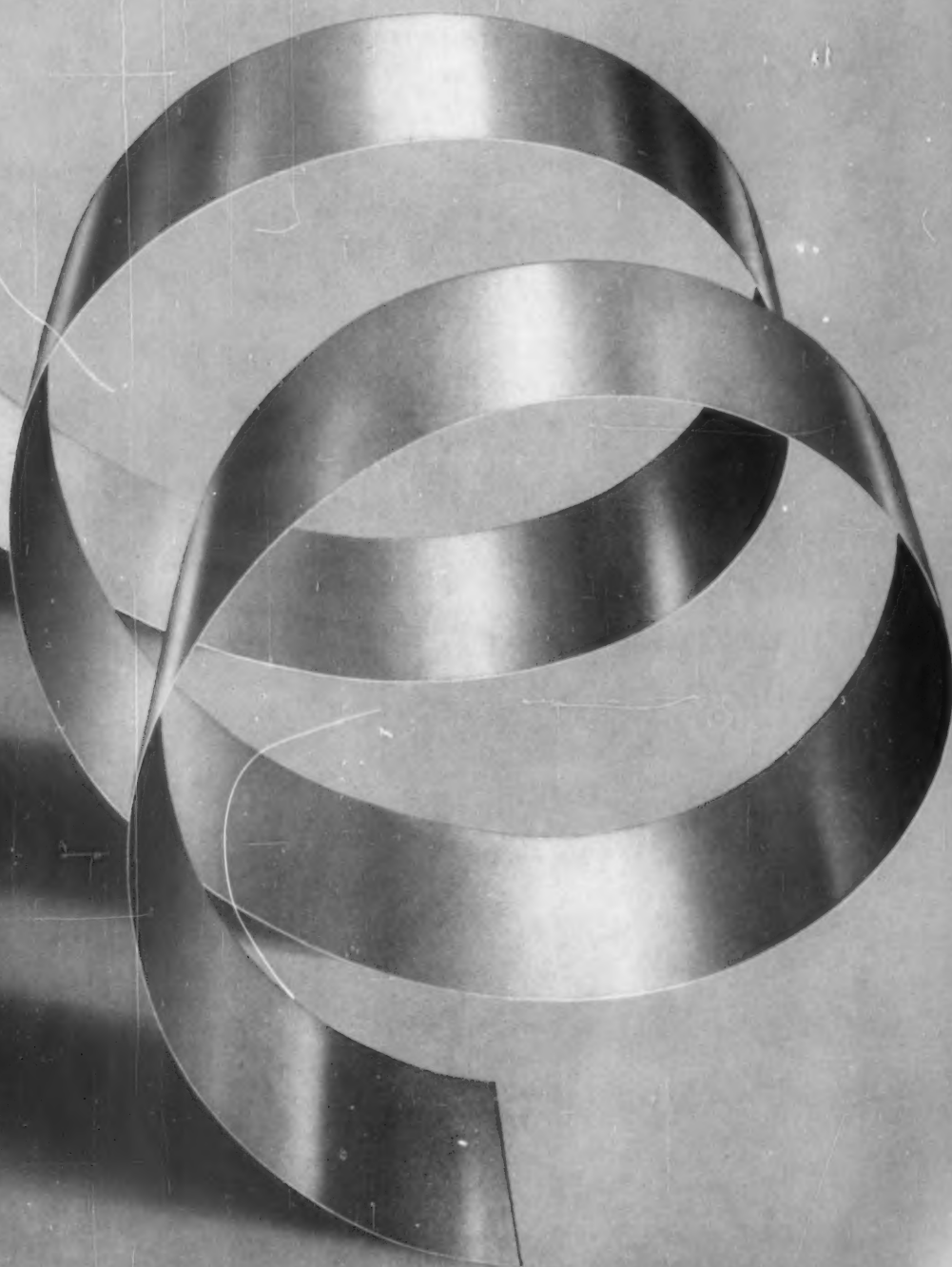
For More Information Write No. 181  
on Inquiry Card—Page 32 →  
PURCHASING

## stainless strip — to your specifications

If stainless strip is part of your product, consider using Crucible stainless. Crucible precision-rolls it to your exact specifications — produces finishes that are surpassingly lustrous. And Cruci-

ble's painstaking methods ensure uniform metallurgical quality as well as gauge uniformity in coil after coil. Why not obtain these combined qualities next time you need stainless? Crucible stain-

less is available in all gauges down to .010" and in all widths. Write to *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*



**CRUCIBLE**

**STEEL COMPANY OF AMERICA**

Canadian Distributor — Railway & Power Engineering Corp., Ltd.



if you buy  
stampings  
... look for the  
PLUS  
beyond  
the PRICE!...



### engineering for instance

Each day, our engineers suggest slight changes which eliminate higher tooling costs or additional operations on our customers' stampings.

Usually this speeds delivery time... another *plus* which alone justifies most differences in original quoted prices!

On your next stamping requirement, look for this *plus* beyond the price... *engineering*... and let us see your prints before you buy!



A brochure is yours  
for the asking!

### DETROIT STAMPING COMPANY

Established 1915

408 Midland Ave., Detroit, Mich.

"America's Leading Job Stamping Manufacturer"

*Look to Detroit!*

For More Information Write No. 182  
on Inquiry Card—Page 32

## FOB—"filosofy of buying"

VALUE ANALYSIS advice is now available to all industry. Two of General Electric's top V.A. experts have set up their own consulting service. The new firm, Value Analysis, Inc., was founded and is managed by J.K. "Dusty" Fowlkes and Howard L.C. Leslie, both of whom worked closely with L.D. "Larry" Miles, manager of G.E.'s Value Analysis Service in Schenectady. The firm offers specialized service in training and assisting qualified personnel and supervising the establishment and carrying-out of value analysis programs. The firm is located at 502 State Street, Schenectady 5, N.Y.

MAN, YOU'RE gonna be all shook up by this! There's a new office chair with built-in electro-massage unit now being marketed. All an executive has to do is relax, sit back, push a button and away he goes. Molded foam cushions in the back, arms and



"Better turn that off Mac, you've already signed that order 27 times."

seat of the chair transmit the cycloid or "Swedish massage" motion of the motor to the occupant. Several hundred purchasing agents attending the National Business Show, where the chair was introduced, were reported tickled by the new chair.

ADD THE Strange World of Electronics: Seems one of our major companies decided to go all out for mechanized materials procurement. In the course of a year they worked up a neat system of punched tape, punched cards and all that jazz to speed the flow of vital purchasing information throughout the company.

Finally the big day arrived. Operators were sitting tensely at their keyboards ready to send the first messages. Big-dome electronic experts were making a hasty last minute check of all stations on circuit. They arrived at the finished stores section and said, "Now remember, Joe, when you receive material, you're supposed to send a tape to our master control room. Joe blanched... "but... uh... I've been sending those tapes for the last two months."

Somehow we get a picture of a guy working on a keyboard in the small hours of the night, sending out receiving reports. Somewhere else in the vast network of this corporation there's a small deserted room quiet except for the clickety-clacking of a monster machine and the faint rustle of tape as it scrapes against the ceiling.

SOCIAL NOTES from the world of purchasing:

A beauty contest and fashion revue in which twenty-five beautiful girls took part were the outstanding features of the annual Christmas Jinks of the Purchasing Agents' Association of Northern California on December 20.

Walter H. Levy, purchasing agent of the California Packing Co. was chairman of the committee in charge of the entertainment. (From the January, 1924 issue of the Purchasing Agent, now PURCHASING Magazine.)



**Y**OU'VE MISSED your chance to snap up that hippopotamus offered by Joe Spagna's New York City Department of Purchase (see page 50, *PURCHASING Magazine*, Dec. 8, 1958.) Bertie the hippo was bought by A. E. Johnson, chairman of the board of Midwest Oil Co. and Argo Oil Corp., of Denver. Some real materials management problems are involved, though: a special crate for shipping Bertie has to be developed by zoo and transportation experts; weather conditions have to be ideal before he can be shipped to Denver; it probably will be necessary to charter a DC-6A cargo plane (at about \$3500) to get the pet off the ground.

**A**DD GOOD public relations jobs turned in by P.A.'s:

Purchasing Agent D. Norton Williams, The Wallingford Steel Company, is the author of a special section on purchasing in the booklet, "Planning Your Future in Connecticut Industry." The booklet is distributed to secondary schools by the state's four



**D. Norton Williams**

major electric utilities as an educational service. It is used in over 90 per cent of the state's secondary schools, primarily in guidance instruction. The purchasing chapter is one of 27 on industrial vocations written by various experts. Williams, who has a fine record of business, association and civic work, was president of the Purchasing Agents Association of Connecticut in 1956.

**"CREATIVE PACKAGING"**  
BY  
**INTERNATIONAL PAPER**  
**CUTS SHIPPING**  
**DAMAGE, SPEEDS**  
**INSTALLATION**  
**OF NEW SUNOCO**  
**PUMPS**

Problem: to move 10,000 new gasoline pumps into Sunoco stations throughout the U.S. and Canada in time for a coast-to-coast unveiling of the new "Pump with a Brain."

The Wayne Pump Co. called International Paper, who engineered a new shipping container for these pumps based on its famous *Tube & Cap* design... sturdy, easily handled, easily opened.

The pumps were then dispatched to 8,900 Sunoco stations via fleets of commercial carriers. Result: exceedingly low in-transit damage and not a single case of damage from carton failure!

No matter what you ship, "Creative Packaging" by International Paper can help you ship it faster, safer, more economically. For full details, mail coupon below.

Your most dependable source of supply...

**INTERNATIONAL**  
CONTAINER DIVISION



**PAPER**  
NEW YORK 17, N.Y.

International Paper Co., Room 1404 PM-1, 220 East 42nd St., N.Y. 17, N.Y.

I would like to have full details on "Creative Packaging" by International Paper

NAME \_\_\_\_\_ TITLE \_\_\_\_\_

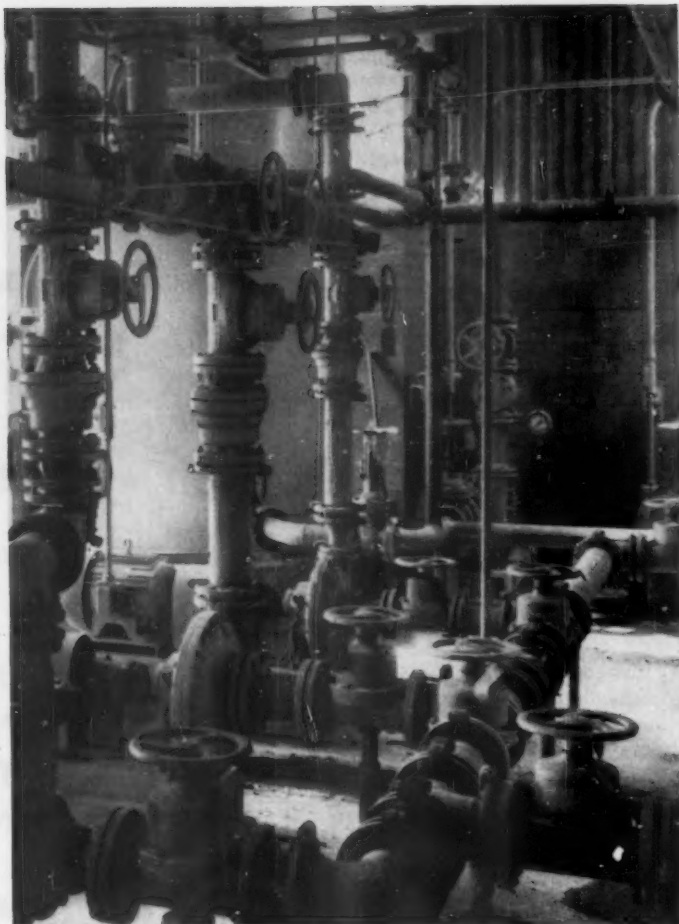
FIRM \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

# Maintaining maximum flow in serum lines with minimum pressure drop

Goodyear Tire & Rubber Company reports no valve clogging or interruption to flow in handling viscous fluids — with Grinnell-Saunders Straightway Diaphragm Valves.



Grinnell-Saunders Straightway Valves are now in use on serum lines of the Goodyear Tire & Rubber Company. Serum is a suspension of rubber particles in an acid brine solution. The installation pictured above is in Goodyear's Synthetic Rubber plant at Houston, Texas.

Grinnell-Saunders Straightway Valves were selected for this service because of their straight-through design. Material in process cannot build up and choke off flow because there are no pockets or gate trenches to trap solids. The straight-through feature also assures speed, ease and economy of rodding out, when necessary. When a diaphragm must be replaced — that job, too, can be done quickly, without removing the valve body from the line.

Isolation of operating parts from the fluid stream is still another important advantage of the Grinnell valve . . . eliminating corrosion and clogging of the valve

mechanism while, at the same time, preventing contamination of product in the line.

Grinnell-Saunders Diaphragm Valves are available in a wide range of body, lining, and diaphragm materials to meet different service conditions. To secure further information, contact the Grinnell branch office nearest you — or write directly to Grinnell Company, Inc., 277 West Exchange Street, Providence, R. I.



Open

Diaphragm lifts high for streamlined flow in either direction. No irregular surface to trap deposits.



Closed

Diaphragm presses tight for positive closure, even when handling viscous or fibrous materials.

## GRINNELL-SAUNDERS DIAPHRAGM VALVES



Grinnell Company, Inc., Providence, Rhode Island

Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermalier unit heaters • valves  
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies  
Industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

For More Information Write No. 184 on Inquiry Card—Page 32

PURCHASING

## Highlights of This Issue

### ✓ Take A Look At Yourself

A good executive should constantly be engaged in self-evaluation. But many of us can find all sorts of excuses to put off analyzing ourselves and our jobs. Year's end offers a good time to stand off and take a look at ourselves in respect to what we've been trying to do—and how well or how poorly we're doing it. For a start, turn to the editorial on page 47 and see how frankly you can answer the question, "What Sort of A Year Has It Been?"

### ✓ P.A. Spearheads V.A.

A purchasing department that keeps hammering away at management about cost reduction may find itself with more work. That's not as bad as it sounds, if the additional job is heading a plant value analysis group. Just that happened a year ago in a medium-sized New England plant. Purchasing has more than justified the move with a number of impressive savings, particularly in transportation. Read about it in the article on page 49.

### ✓ Be Careful With Competitive Bidding

Are you confident that competitive bidding is the most effective way to get the lowest price? Don't be too sure. Sometimes the process costs more than it saves. For some guides on when and when not to use the technique, see the article on page 51.

### ✓ Purchasing With Teeth In It

The only purchasing department worth its salt, according to a leading utility buying executive, is "one with teeth in it." You get authority and management backing, he says, when you (1) show a willingness to take on more responsibility, and (2) produce tangible evidence of cost reduction and greater efficiency. His department did just this and achieved top rank in the company. Read about it starting on page 56.

### ✓ Other People's Mail

Feel like sounding off about something you've read in PURCHASING magazine—or anywhere else for that matter? Write us a letter. And if you're not in a writing mood, you'll probably be interested in what your fellow P.A.'s are thinking and saying about the hottest topics of the day. Get the habit of reading other purchasing people's letters. They're not only interesting, they're instructive. Start now on page 36.

#### What's Coming in Future Issues

A New Look at Make-or-Buy—Handling Small Orders—Salesmen Evaluate Purchasing—Is Standardization Really Worthwhile?—Legal Aspects of Purchase Orders.

save up to

**33<sup>1</sup>/<sub>3</sub>%**

with

**WAVERLY  
HI-DRI**



Actual tests prove that all-purpose Waverly Hi-Dri oil and grease absorbents will cover up to 33-1/3% more floor space than other similar materials.

Compared to ordinary absorbents, Hi-Dri is lighter in weight and absorbs more. There are more than 37 million thirsty granules in every 50 lb. bag.

Translated in terms of money, this means you actually save up to one third of your costs by putting Hi-Dri's volume/weight advantage to good use. What better way to put new economy to work on your maintenance, safety and sanitation program.

Test Hi-Dri under actual working conditions in your own plant, and you'll see what we mean.

Call or write today for a generous free sample.

**WAVERLY**

PETROLEUM PRODUCTS CO.

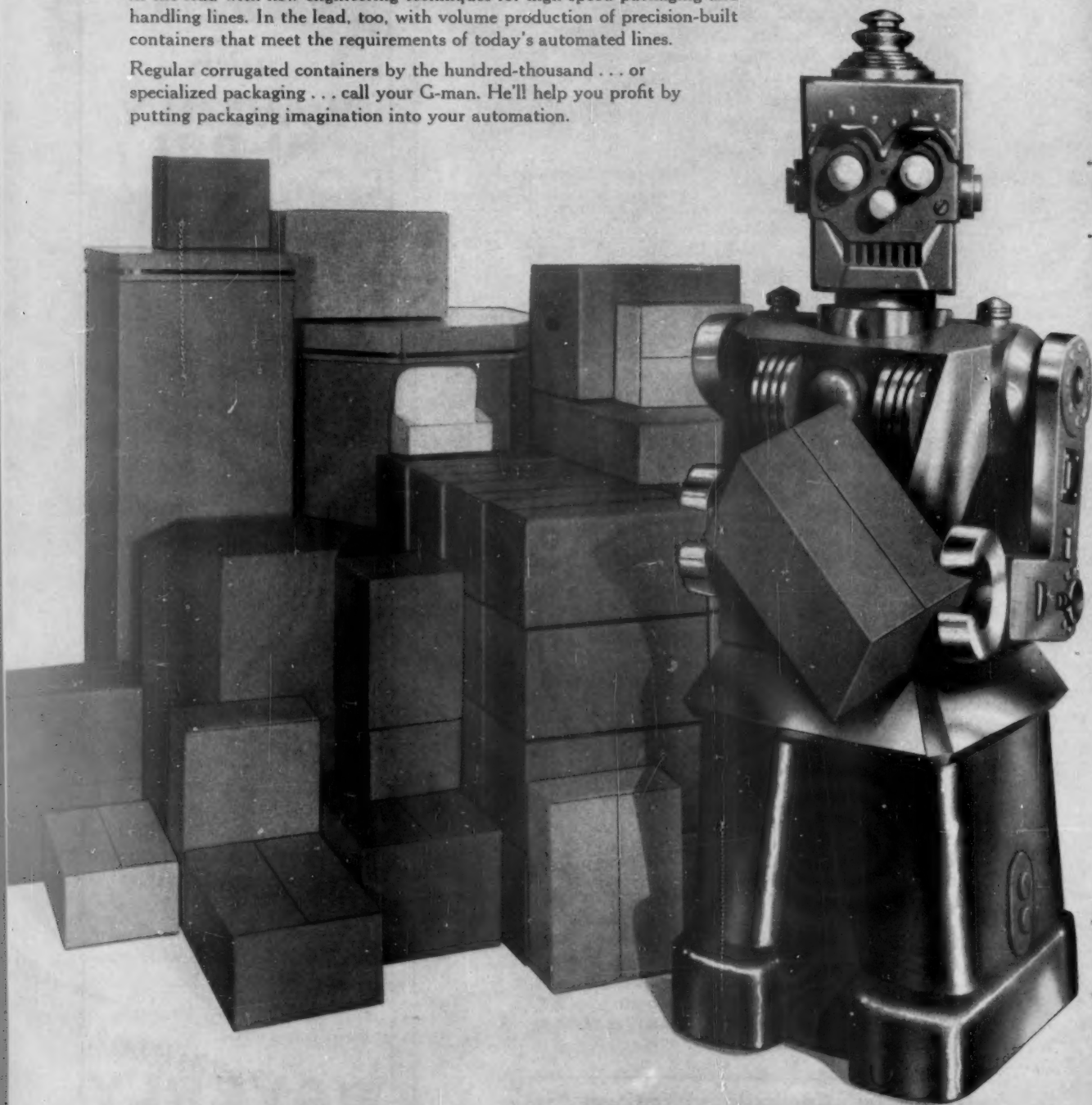
1724 Chestnut St., Dept. P  
Philadelphia 3, Pa.

For More Information Write No. 185  
on Inquiry Card—Page 32

# GAYLORD PUTS IMAGINATION INTO YOUR AUTOMATION

Not ready for robots? Fast-moving progress in automation can out-date your packaging operations in just a few years. That's why you'll find Gaylord in the lead with new engineering techniques for high-speed packaging and handling lines. In the lead, too, with volume production of precision-built containers that meet the requirements of today's automated lines.

Regular corrugated containers by the hundred-thousand . . . or specialized packaging . . . call your G-man. He'll help you profit by putting packaging imagination into your automation.



**GAYLORD**  
CONTAINER CORPORATION



HEADQUARTERS, ST. LOUIS  
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**





## What Sort of Year Has It Been?

**A** NNUAL REPORT time is just around the corner. It's time to start thinking about what you are going to tell management about the year's purchasing activities. Are you approaching that job as a chore or as an opportunity? Here are five suggestions that will help you make a better report.

(1) *Put yourself in the general manager's place.* What would you want to know about the purchasing record? Look at it that way, and you'll probably discard the statistics about number of requisitions handled, number of orders issued, and a lot of the routine data that is part and parcel of the current operating record throughout the year. You'd be interested in results in terms of dollars and service, which are at the heart of the purchasing responsibility. You'd be interested in comparisons and trends, showing the direction and the rate at which material requirements and costs are moving.

(2) *Put in a plug for the purchasing function.* Subtly, of course. Maybe your management understands and respects purchasing's part in the over-all picture. Maybe you are taken for granted. In either case, this is your opportunity to present the record as something more than mere spending. Write the report in terms of purchasing's broader objectives and accomplishments—cost reduction, improved sources, good inventory control, reliable service of supply.

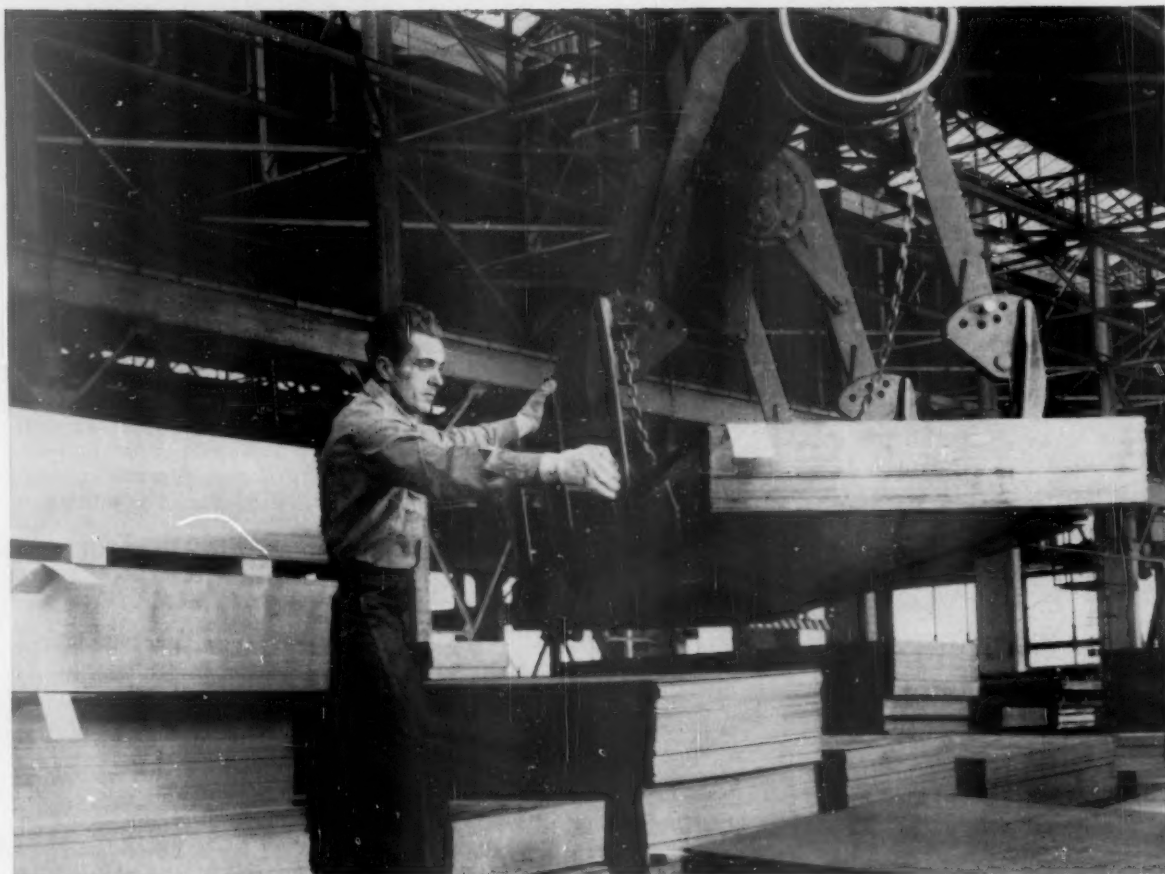
(3) *Take a hint from company reports*—from management's own accounting to the ultimate bosses, the stockholders. You'll find that the figures, essential but dull, are pretty well concentrated in a couple of columns. The bulk of the report, the part that is readable and informative, concerns the conditions and problems that have arisen during the year, the measures taken to meet them effectively and to keep the company in a sound position. That makes informative reading about the purchasing program too.

(4) *Show what the department is worth to the company.* If you have done a competent job, you have contributed to company profits, helped hold the line against rising costs, helped maintain a good competitive position. You can prove the point by relating the department's price performance to the general price indices and to unit product costs, and by reporting actual, demonstrable savings.

(5) *Take a look ahead.* Reporting past activities is pretty sterile unless that review helps in planning for the future. Your experience and analysis has probably given you a pretty good idea of the conditions and problems to be faced in the months ahead, and how to cope with them. Those opinions are valuable to management. The report is a logical place for recommendations on materials policy and for strengthening the purchasing department.

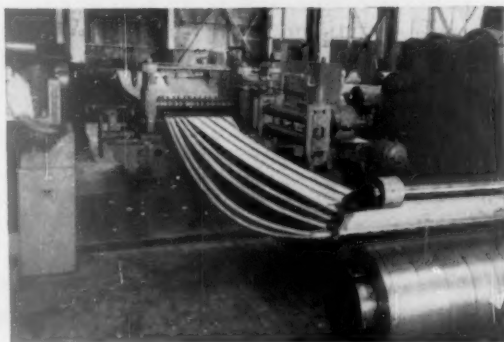
A report that is merely a historical document earns only that deadly comment: "Note and file." A constructive report is a working document, a blueprint for better performance, greater recognition, and more profitable results.

*Stuart F. Henrity*



Flat sheets in 577 different lengths—up to 16'.

## Now... reduce sheet-forming costs with Ryerson quality-controlled steel



Accurate slitting on widths up to 48".

Whether you use hot or cold rolled sheet or strip, you can now make sure of the utmost in formability and weldability—by ordering to .10 maximum carbon content (SAE 1008) from Ryerson.

This means you can minimize, or even eliminate, the problems of variation in forming and welding quality—caused by the average wider range of carbon content.

You'll also find Ryerson prepared to give you fast, accurate service on your special requirements: strip and sketch cutting, blank shearing, edging, coil slitting, etc.

A Ryerson sheet and strip specialist is as near as your telephone—qualified by experience to recommend the stock exactly suited to your requirements, at the lowest cost. Put Ryerson steel experience and unequalled facilities on your cost-cutting team today.



# RYERSON STEEL®

Member of the  Steel Family

Principal Products: Carbon, alloy and stainless steel—tubing, bars, structurals, plates, sheet, tubing—aluminum, industrial plastics, metalworking machinery, etc.

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • WALLINGFORD, CONN. • PHILADELPHIA • CHARLOTTE • CINCINNATI • CLEVELAND  
DETROIT • PITTSBURGH • BUFFALO • INDIANAPOLIS • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

For More Information Write No. 187 on Inquiry Card—Page 32

# Purchasing Spearheads Value Analysis Program

*If you can get purchasing, manufacturing, quality control, and maintenance working together toward a common goal, the results can be amazing.*



Even though it has no storage facilities, Aerovox saves \$12,500 a year by buying ethylene glycol in tank truck and transferring the material to its own drums for storage. Watching the drums being filled, here, are: Buyer Edmund Hickey; George LaPointe, regional manager of P. B. Mutrie Motor Transportation, and Director of Purchases Bob Crabbe.

**A**EROVOX CORP. of New Bedford, Mass. is making money with a committee approach to value analysis. Spearheading the program is the purchasing department under Director of Purchases Robert E. Crabbe. The program got underway in January, 1956.

The committee approach was nothing new to Aerovox; it is used to attack other major problems. Because of the important effect of purchases on company costs, Purchasing Agent Crabbe was appointed chairman of the newly formed cost reduction committee.

His assignment: ferret out ways to cut materials costs.

The job, to be successful, naturally could not be a solo performance by the purchasing department. A team approach was vital. Called upon to serve upon the new committee were representatives of all major departments concerned with specifying, handling, and using materials. Specifically included were people from maintenance, engineering, production control, methods, quality control, and manufacturing. Of course, the same people were not

involved with every material studied and only those actively interested in a particular material normally participated except when asked for technical advice, etc.

## **Chemicals Fertile Field**

Aerovox makes capacitors. Various chemicals are important raw materials—including mineral oil, diethylene glycol, Aroclor (made from chlorine and benzene), and boric acid.

Aroclor was one of the first major raw materials the commit-

## **The Team Approach . . . It's essential for the smaller company**

Aerovox, like other medium-sized and small manufacturers can't afford to have high-priced specialists in value analysis. It must rely on the brainpower of people fully employed in manufacturing, engineering, finance, and purchasing. In short, the committee approach to value analysis is the only practical approach.

Though there are problems in getting a group of people in different departments to work together for a common value objective, the experience of Aerovox and dozens of other smaller companies proves that it can be done successfully and profitably. P.A.'s that haven't tried it yet are missing a chance to simultaneously serve their companies. There are still thousands of P.A.'s who haven't tried this committee approach. If their managements are even half-receptive, they're missing one of their great opportunities to prove the value of imaginative buying.

tee tackled. "Our big problem with Aroclor was not figuring out how to go about making a saving—that was easy—but convincing everyone the saving could be made without impairing quality," Crabbe recalls. The company purchased Aroclor in drums. Obviously a saving could be made if the material could be purchased in bulk in tank cars. The bulk price was 1½¢ a lb. lower. But actually getting that 1½¢ saving was far from easy.

In the first place, Aerovox doesn't have its own railroad siding so it has the problem of transporting material from cars in yard to its plant in trucks. Second, Aroclor is highly susceptible to contamination and Aerovox's rigid quality requirements limit impurities to a maximum of ¼ part per million.

Quality control feared that the extra handling in transferring the Aroclor from tank cars to drums—necessary because the company had neither siding nor storage facilities—would contaminate the material. Special procedures had to be devised to insure that there would be no contamination. The committee started to work on the Aroclor problem in January, 1956. Progress was slow—and sometimes discouraging. Finally, after much thought and research, the project was successfully completed almost two years later in

December, 1957.

The savings were worth the effort. Initially, they were estimated at about \$17,000 a year. But the differential between the drum and tank car price was recently increased by chemical producers to 2½¢ per 16, so the saving is now closer to \$25,000 a year.

### **Other Projects**

Aerovox's problems with diethylene glycol were similar to those encountered on Aroclor. Again the material was formerly bought in drums and is now purchased in bulk. The only difference is the diethylene glycol is now purchased in tank truck quantities instead of tank cars. The glycol is pumped out of the trucks into drums for storage prior to use. "Naturally this extra handling costs us money," Crabbe points out, "but we only spend about \$100 extra handling for every \$2000 we save on quantity discounts."

Like Aroclor, diethylene glycol is tricky to handle. There was, at first, considerable fear that the glycol would be contaminated by the extra handling. There was also the problem of a pump on the truck; it could contaminate the material. The solution was a deal with the trucking company to permit Aerovox to use its own pump for emptying the tank trucks. This not only helped pre-

vent contamination but also gave the company a slightly lower rate.

All these arrangements were well worth the trouble. For, just as with Aroclor, the savings have been greater than planned. Formerly there was 2¢ price differential between shipments in barrels and in tank truck. But by the time Aerovox actually switched to tank truck, the differential had widened to 2½¢. So savings are now about \$12,500 per year.

### **Solid Chemicals Too**

Boric acid was another major chemical analyzed for cost reduction. The company had been buying it in powdered form shipped in granulated form from a West Coast supplier. The first thing purchasing did was to try to persuade manufacturing and engineering to use granulated boric acid which was \$2.50 per ton cheaper. This wasn't easy; the granulated material had been tried before and did not dissolve satisfactorily. This time, however, manufacturing licked the problem of solubility and the change was approved.

Purchasing didn't stop with this change. Boric acid had been going up in price and Buyer Ed Hickey was looking for every possible opportunity to cut costs. He noticed that the supplier offered the boric acid in multi-wall bags \$15 per ton lower than the price for the material shipped in drums. But no one had ever tried to ship boric acid 3000 miles in bags before. Aerovox decided to experiment. It has been shipping in bags ever since.

Purchasing didn't stop with this saving either. The bags were shipped loose in cars at first. It was believed that if the bags were palletized there would be breakage problems when the fork trucks picked them up. Aerovox decided to experiment. It has been shipping boric acid in palletized paper bags ever since—at great saving in labor since shipments need no longer be unloaded by hand.

This "never-say-die" attitude is typical of Aerovox purchasing and is one big reason why it has been so successful in providing the company with high quality materials at minimum cost.



# How to Get the Most Out of Competitive Bids

*Competitive bidding can be an effective way to get the lowest price. But sometimes it costs more than it saves. Here are some guides on when and when not to use this technique.*

**By John Van de Water**

**T**HE MOST obvious way a P.A. can help his company fight inflation is to make certain he's not paying more than he should for an item. And the most obvious purchasing tool to help you get the lowest price is competitive bidding.

There are some P.A.'s who boast they never place an order without getting competitive bids. In fact a survey by the National Industrial Conference Board shows that "more than half of those who follow the practice of requesting bids do so for all materials bought."

Most P.A.'s who get competitive bids on all their orders smugly assume they are getting the best price on every buy they make. And there's no doubt that it is reassuring to get bids on every order. But it is it worth it? Do we get more for our money: If we don't get more—either in the form of price, quality, or service—bids only increase our cost.

It is difficult to lay ground rules covering when it pays to get competitive bids. The decision, actually, has to be left to the buyer's best judgment. Complete reliance

on competitive bids leads to mechanical buying. It creates a tendency to select vendors on price alone. The buyer is lulled into a false sense of security because he has "covered" himself with paperwork.

## **Bid List Is Vital**

Actually competitive bids are no better than the bid list, and often bid lists play favorites. Not by design of course—it just works out that way.

If a vendor quotes regularly but never gets an order it is time to give him another look. On the other hand, if one vendor always

gets the business, the whole bid list should be carefully reviewed. Your list may include vendors who always quote high or who can't meet delivery requirements because of location, type of business, size, etc. These are not true competitors and should not be kept on the list.

If the vendor who gets your order is competing against companies that aren't really competitors, you will never know if you are getting the best buy. Some bid lists include suppliers who may be wholesalers, distributors or agents. These are not always competitive with one another or with manufacturers and are not intended to be. You have to decide which type of supplier best suits your needs before making up a bid list.

No vendor should be asked to quote just to get another price. Be prepared to buy from the supplier who comes out best. If he needs to be investigated, this should be done before he is asked to quote.

In addition, many buyers feel that it is unfair to negotiate with a vendor after competitive bids have been received. The only exception to this would be for purchases of special equipment or on subcontract work. In these in-



**"If that's your final answer give me back my catalogs."**

*Mr. Van de Water is General Buyer for the Worthington Corporation. He has written many articles on purchasing subjects.*

stances, bid requests can often help you find the most competent supplier, but the details of the contract cannot be settled except through considerable discussion and negotiation.

If you want to favor a particular vendor (and there is nothing wrong with this for there may be very good reasons), recognize this situation and don't ask for competitive bids. The bids will only be a waste of time for your own department and for the vendors you know don't have a chance.

### No "Must" Situation

When should we use competitive bids? Are there situations when we should always request bids? Are there cases where they are never needed? Unfortunately, there are no definite answers to these questions. Many attempts have been made to set up minimum conditions which call for competitive biddings, but none of them have been very successful.

In most of these attempts to establish conditions that call for competitive biddings, the following items are usually cited:

1. Value of order
2. Class of material
3. Type or condition of market
4. Frequency of purchase
5. First time purchase

The National Industrial Conference Board's survey showed that \$20 to \$500 is used as a minimum order value for obtaining bids. Our own experience indicates that \$25 and \$100 are favorite figures.

Most of the minimum order values are arrived at arbitrarily and have no relation to purchasing economics. But no matter what dollar value is picked, there are always exceptions.

For example, in buying products such as small mechanical parts or plastic materials, it is often possible to save five or ten dollars on a hundred dollar order. But with a material like steel, there's an entirely different situation. The price is the same throughout the industry. Competitive bids in this case are a waste of time and money.

Any time a buyer is thinking about getting competitive bids, he should consider what it costs to

obtain and handle the bids. If he knows it is going to cost him \$10 to get bids and that the order is worth only \$25, there is obviously no point in asking for bids. If he's trying to place a \$100 order there is slightly more justification, but in most cases \$250 is about the lowest order value on which bidding is worth while.

It is generally agreed that capital equipment, building construction, and sub-contract work should be purchased by competitive bidding. But for other classes of materials there is no clear-cut answer. The more variations in the way a product is made, the more useful competitive bidding becomes. If either the process or end product is highly standardized, however, competitive bids are of little help.

Of course, competitive bids are a must if a buyer is dealing in a competitive market. But when industry prices reign and specifications are standard, bids should be avoided. In these instances published price lists are generally available.

Closely related to market conditions is frequency of purchase. Purchasing instructions often state that bids should be obtained unless material was ordered 30, 60 or 90 days before. The theory seems to be that if the product was purchased recently, the buyer will remember the market.

The point, however, is not whether the buyer remembers the market as it was when he made his last buy. What's important is whether he is in touch

with current conditions. Some markets are so volatile that they have to be followed daily. Others remain steady for years, then change suddenly. Obviously, competitive bids are most useful when a buyer doesn't know the market and wishes to determine the best value in a competitive market.

Should we obtain bids for all first-time purchases? Again there's no yes or no answer. If a first-time order is also a one-time order, the question of whether the cost of getting bids will be more than any saving must be considered. If the order is small, little can be gained. If it is large, it is apt to fall in the capital equipment or special product class which would require competitive bidding. But when material will be bought regularly, it is essential that competitive bids be obtained for the first purchase, both to learn the nature of the market and to develop adequate sources.

As an aid in helping you decide whether competitive bids are useful in specific situations, ask yourself these questions:

1. Is the use of competitive bids economical? Compare possible savings to the cost of getting the bids.
2. Is the market competitive?
3. Are we out of touch with current market conditions?
4. Are we buying capital equipment, construction, or subcontract items?
5. Is this a first-time purchase of material that will be ordered regularly?



"Another reason our prices are low—our firm underpays its employees."



Southern Union's Purchasing Agent Fred Bradley keeps in close contact with the 65 locations in the company's farflung system. But paperwork and red tape are kept to a minimum.

## The Secret to Field Purchasing: Keep It Simple

*Here's how a public utility with 65 branch locations streamlined what potentially could have been an extremely complex field purchasing operation.*

**I**F YOU'RE a P.A. for a company with a number of branch plants, probably one of your biggest problems is controlling the purchasing operations at these outlying areas.

However, whenever you're feeling sorry for yourself for having to organize, coordinate, and regulate the activities of three or four branch factories, pause a moment and think of Fred Bradley, purchasing agent for the Southern Union Gas Company of Dallas. His company has 65 different locations in four southwestern states and all of them have to be supplied with goods and services.

### **Non-Stock Items**

Bradley's system for keeping tabs on the purchasing activities throughout the far-flung Southern Union territory is simple. Both reports from field stations to headquarters and directives from headquarters to field stations are kept to an absolute minimum. Special situations are handled quickly, with a minimum of red tape.

For instance, purchases of non-stock items up to \$200 can be made by storekeepers in the field. This makes it unnecessary to send

a requisition to the central purchasing department.

The main reason for this is that most non-stock materials are purchased near the field installation. Supplies are usually received from the vendor shortly after the order is placed. Of course, central purchasing gets a copy of the purchase order and so is kept informed about all field purchases. This system eliminates the several days' delay that would result if the field storekeepers had to get approval from central purchasing before making any purchases.

Southern Union uses repeating (travelling) requisitions for stock items, which make up around 90% of its purchases. Use of travelling requisitions cuts down administrative work on both ends of the pipeline. Area storekeepers merely pull out the card from the file for the item needed and send it to Dallas. This eliminates the job of preparing separate requisitions for each purchase. The four-man headquarters staff can quickly determine the vendor and other relevant information for the purchase order from the requisition form itself.

Another example of headquar-

ters-field simplification is in salvage disposal. Whenever a store-room wishes to dispose of scrap, it prepares a salvage disposal request form and sends it to Bradley's office. This form lists the items to be disposed of, names of prospective buyers, and the reasons for selling.

If Bradley does not know of any other Southern Union location that can use the material and if he has no additional names to add to the list, he approves the request and returns it to the location. This makes it certain that no potential buyers are overlooked in the disposal process. And it also prevents a branch operation from selling material that another location could use.

### **Checks Storekeepers**

Bradley makes periodic trips around the system to check on the activities of the storekeepers. He gets a chance to listen to their problems and to make suggestions. But basically his method of supervising the whole \$8½-\$11 million purchasing operation—in Texas, New Mexico, Arizona, and Colorado—can be stated in just a few words: Keep it simple.

# How to Postpone the Effect Of Supplier Price Increases

*When prices go up, forward buying can be profitable. But it shouldn't be done on a hit-or-miss basis. Here is a technique designed to maximize the profit in forward buying.*

By Julius Kneitel

**P**RICES are going up. Typical procedure when a price increase is announced is buy at least a few months ahead in order to at least postpone the effects of the price increase. Higher prices must be paid eventually since no company can afford to stock an infinite inventory of any item.

Every purchasing agent does at least a little forward buying. But few purchasing agents know exactly how far they should go in buying ahead. There is no reason why they should be confused. It is possible to develop mathematical tools to determine precisely how far forward buying policies should be carried and these tools are not as complicated as they appear to be.

This problem, basically, is one of return on investment which can be stated as follows:

$$\text{Return} = \frac{\text{Net Savings or Profit}}{\text{Average Investment}}$$

Let us now make the following assumptions.

X = Quantity we should buy—units (pounds, pieces, etc.)

A = Present Cost in dollars/unit

B = Anticipated price increase—% (as a decimal)

C = Cost of carrying inventory—annual % (as a decimal)

D = Desired return on investment—annual % (as a decimal)

E = Anticipated usage in units/wk

Since return on investment is usually expressed as an annual percentage, our formula must in-

troduce the factor  $\frac{X}{52}$  which represents the frac-

tion of a year's worth the purchase will encompass. In other words, if a 10% annual return is desired this is the equivalent of 5% in 6 months, 2½% in 3 etc. Therefore, return can be expressed as—

*This article is the result of research on forward buying done by Mr. Kneitel for the purchasing section of the Small Motor Department of the General Electric Co.*

$$\text{Return} = D \times \frac{X}{52} \times \frac{E}{52E} = \frac{DX}{52E}$$

Net savings represents gross savings as a result of the purchase less the cost of carrying this inventory. The inventory percentage must be adjusted in the same manner as the return was. Therefore,

$$\begin{aligned} \text{Net savings} &= XAB - \frac{XA \times C \times \frac{X}{E}}{2} \\ &= XAB - \frac{X^2AC}{104E} \end{aligned}$$

and,

$$\text{Average Investment} = \frac{XA}{2}$$

If we now substitute these unknowns into our original equation, the following results:

$$\frac{DX}{52E} = \frac{XAB - \frac{X^2AC}{104E}}{\frac{XA}{2}}$$

Simplifying and solving for X, we find that

$$X = \frac{104EB}{D+C}$$

Now we have a mathematical expression properly correlating the significant factors which can be used as a tool for making the necessary decisions.

## Graphical Analysis

This formula, however, is even more useful when analyzed graphically. Assuming E is "one week's worth of material" and B is a "one percent price increase," then values of X can be plotted against the combined values of D and C, the results of which appear on the following page.

Analyzing this curve reveals some very interesting information. First, we know that, generally speaking, the cost of carrying inventory lies in the 8—15% range, depending upon the commodity involved. Also, a desirable return on investment, after taxes, would probably fall in the 15—20% range, which is about 30—40% before taxes. This, then, yields a combined range



## How to Use The Price Increase Formula

### Application to Hypothetical Examples

#### Shafting Steel

Anticipated Minimum Increase—7% (90% probability)

Anticipated Increase Date—Jan. 2, 1959

Assume  $D + C = 45\%$   
then  $X = 2\frac{1}{2}\%$  per percentage increase.

Maximum purchase size =  $7 \times 2\frac{1}{2} \times .9 = 16$  weeks.

Though 16 weeks of shafting could be purchased economically, the Aug. 1, increase date obviates the purchase of any additional material since very little of it would arrive prior to this effective date.

#### Bearings

Anticipated Increase — 7-10% (95% probability)

Anticipated effective date—Feb. 10, 1959

Assume  $D + C = 45\%$   
then  $X = 2\frac{1}{2}\%$  per percentage increase

For 7% increase

Purchase size =  $7 \times 2\frac{1}{2} \times .95 = 16$  weeks

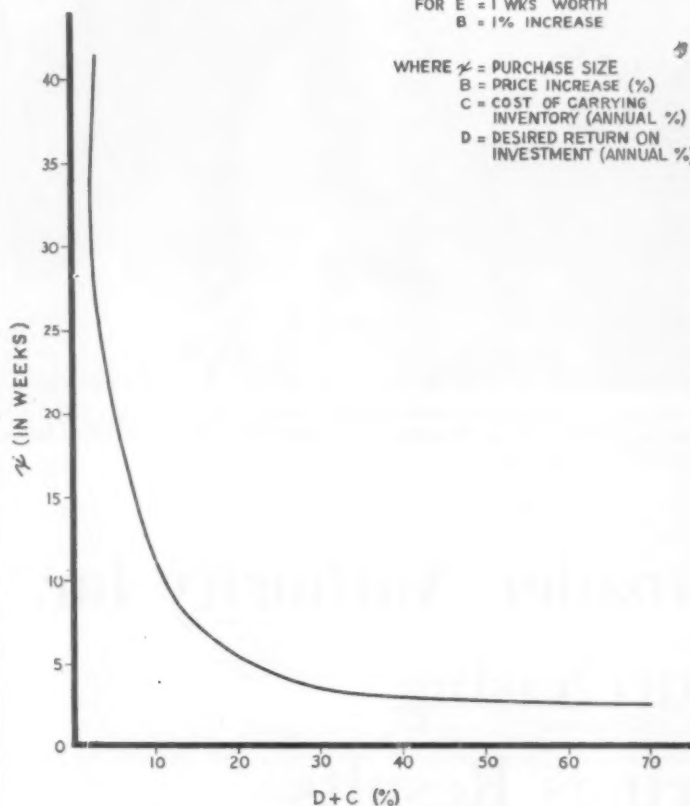
Though 16 weeks additional bearings could probably not be purchased prior to the effective date, it is deemed advisable to reschedule orders immediately such that as much of this material as possible arrives prior to February 10.

## MAXIMUM ALLOWABLE PURCHASE SIZE (IN WEEKS) FOR EACH 1% PRICE INCREASE

$$X = \frac{104EB}{D+C}$$

FOR  $E = 1$  WKS WORTH  
 $B = 1\%$  INCREASE

WHERE  $X$  = PURCHASE SIZE  
 $B$  = PRICE INCREASE (%)  
 $C$  = COST OF CARRYING INVENTORY (ANNUAL %)  
 $D$  = DESIRED RETURN ON INVESTMENT (ANNUAL %)



of 38 to 55% for  $D$  plus  $C$ . Note that the curve in this range is rather flat with values for  $X$  at the extremes being equal to 2.8 and 1.9 weeks respectively, and with an average slightly under  $2\frac{1}{2}$  weeks.

Essentially, then, a generalization can be made on the basis of the above observations. If the assumed range of  $D + C$  is considered satisfactory, then for each 1% of anticipated price increase, it is highly profitable to purchase an additional  $2\frac{1}{4}$ — $2\frac{1}{2}$  weeks worth of material. So we find that what started as a search for a relationship between many variables results in a very simple answer which can be used with reliability as a guide for making those decisions in question.

### Judgment Still Important

To complete this study, it is advisable to consider the speculative aspects involved. Naturally usage rate is never constant, possible obsolescence and deterioration (above that allocated in the cost of carrying inventory) should be considered,

and, in many cases, the exact date and percentage of the anticipated increase are unknown. It is in this realm that judgment plays an important role.

The purchasing executive must apply probabilities to each speculative factor, determine the cumulative probability and adjust the  $2\frac{1}{2}$  week figure accordingly. For example, if the probability of obsolescence or deterioration are zero, the probability of a minimum 6% price increase is 90% and the probability of the forecasted usage rate is 95%, then the cumulative probability is 85.5% and the quantity to be ordered would be  $6 \times 2\frac{1}{2} \times .855$  or 13 weeks.

Obviously, this same problem can be worked out using the probabilities of a minimum 7%, 8% or more of price increase or variations in forecasted usage. The results so obtained can then be reviewed for timing and the ability to procure the desired additional material. Although probabilities can be assigned to these last items, a mathematical analysis does not appear most advisable.



Both Director of Purchasing and General Services M. L. Neylon (left) and Purchasing Agent Gilbert Rhoades had broad operating experience before coming into purchasing.

## Broader Authority for Purchasing Brings Results

*Purchasing in this company plays the key role in inventory control, standardization, transportation and other important areas. But management didn't hand it out on a silver platter. Recognition came only with results.*

**PURCHASING** is in a strong position with United Fuel Gas Company and affiliates, Charleston, W. Va. (They comprise a unit known as the Charleston Group Companies of the Columbia Gas System.)

Director of Purchasing and General Services M. L. Neylon is a member of the large utility's 18-man top management staff. He and his department have broad responsibility and authority.

The reasoning behind the ar-

range is simple. Setting it up is a little more complex.

"When you're spending \$20 million a year," says Mr. Neylon, "you need strength in purchasing. You need a set-up with some teeth in it. But you don't get it on a silver platter. You have to fight for it. If you have your story straight, though, and the results to back it up, a progressive management will give you what you want."

His department's results have

been notable. Its integrated program of inventory control, standardization and transportation cost reduction has had a key role in increasing efficiency and cutting costs. To carry out the program purchasing has been given increasingly wide scope. The size and nature of Mr. Neylon's organization reflects management's satisfaction with purchasing.

In addition to all buying personnel, his group includes: the stores supervisor, the transportation supervisor, and the building facilities superintendent. Another member is the manager of the utility's impressive operating center at St. Albans, W. Va. The purchasing department also handles an unusual automotive vehicle leasing plan which involves, at present, almost 400 of the company's 700 vehicles. A separate story on the leasing plan will appear in a later issue.

### Growth Takes Planning

When Mr. Neylon came in from the compressor department seven years ago, he had some strong ideas on purchasing. As an operating man he knew just what effect a good—or bad—purchasing job could have on company operations. He was determined that the job would be consistently good.

First move was to get all the expert help he could. He visited a number of other utility companies to study their procedures and policies. At the same time he moved toward installing operating personnel in all key purchasing positions. These were selected, of course, as much for their skill in business administration as for their technical knowledge. But Mr. Neylon feels strongly that shop experience is of great value in making a well-rounded purchasing man.

### Stock Control Problem

An inventory control problem faced the company at the time. Large public utilities need many stock locations spread out over a wide geographical area. And the Charleston Group has them—about 200 within a group of about 20 districts.

Control of stock obviously had a lot of clinkers in it. Lack of

centralized control resulted in duplication and over-inventorying. There were shortages of some items, while others became obsolete sitting on shelves. A very wide selection of items must be carried in varying amounts. The utility uses pipe, for example, with pressure ratings from ounces up to 2000 lbs. In a sudden emergency—flood or washout—it might be called on to replace up to 3 miles of 12" pipe immediately.

Under the old system, all stock transactions were entered manually on cards maintained at division offices. Reports on inventory were compiled only once a year. Historical records on certain items used in a number of locations were hard to obtain.

A few years ago the company decided to centralize and mechanize its materials and supplies accounting. The manual system was dropped in favor of IBM machine accounting. A standard description and numbering system for all items was begun. A new unit, the Stock Control Department, was set up in purchasing to act as a clearing house between district offices and the accounting department in the general office. It was also given the job of advising purchasing when surplus material might be transferred between stock locations in place of buying new material.

The new system has tightened inventory control all along the line. Records are up to date immediately and purchasing and other management groups get monthly instead of yearly reports. Obsolescence has been reduced and a substantial cut in inventory has been made. Purchasing has immediately at hand all facts needed to help it in establishing proper order quantities, combining requisitions, etc.

### Standardization Helps

Hand in glove with good inventory control goes standardization. The material standardization program in the Columbia System is under the sponsorship of the System Purchasing Committee—a logical step in view of what standardization can do to reduce investment in supplies inventory. Selection of items for stand-

**COLUMBIA GAS SYSTEM**  
Material Standardization Index  
Number 1

**Classification** Welding Equipment and Supplies

**Item** Welding Electrodes

**Scope** The following list includes all electrodes that have been tested and found to be suitable for pipe line welding

Material Code Number	Major Class	Minor Class	Name of Manufacturer	T	F	S
73	13		Lincoln			
73	13		A. O. Smith			
73	13		General Electric			
73	13		Air Reduction			
73	13		Wilson			
73	13		Metal and Thermit			
73	13		Westinghouse			
73	13		Hobart			
73	13		McNair			
73	13		Harnischfeger			
73	13		Lincoln			
73	13		A. O. Smith			
73	13		General Electric			
73	13		Air Reduction			
73	13		Wilson			
73	13		Metal and Thermit			
73	13		Westinghouse			
73	13		Hobart			
73	13		McNair			
73	13		Harnischfeger			

Exhibit  
Colum. No. 15  
Rev. No. 7  
5/13/55

**COLUMBIA GAS SYSTEM**  
Material Standardization Index  
Number 1

**Definitions**

1. American Welding Society Specification E-6010  
The electrodes covered by this specification will be used for Butt Weld, Continuous Weld, Lap Weld, API 5L Grade A and API 5L Grade B pipe on all beads. Also these on API 5LX or Equivalent Pipe in Grades X42, X46, X48, X52.

2. American Welding Society Specification E-7010  
The electrodes covered by this specification will be used for the filler bead on API 5LX or Equivalent Pipe in Grades X42, X46, X48, X52.

**Permissible Variation of Specifications**  
It is permissible to use AWS Specification E-6010 for the stringer and cover beads and AWS Specification E-7010 for the filler bead on API 5L Grade A and API 5L Grade B pipe.

**Well Casing and Tubing**  
When well casing and tubing is welded with electrodes, AWS Specification E-6010 will be used for the stringer and cover beads and AWS Specification E-7010 will be used for the filler bead.

**SPECIMEN ONLY**

Suggested Descriptive Sizing and Specifications to be used in preparing Purchase Requisitions covering Welding Electrodes. Description and Specifications should conform to each type of Welding Electrode that is required.

Quantity	Unit	Code Number	Size	Description and Specifications (Including Weight, Part No., Catalog No., etc.)	Total Cost	Amount Number to be Charged	For Purchasing Dept. Use Only
							Vendor P.O.D. Total Purchase Order Number
1000	lb.	73 13 175	5/32"	Shield-Arc (Lincoln) #5 Welding Electrodes. A.W.S. Class E-7010.			

Sample pages from the Columbia Gas System's Material Standards Manual

ardization study is a joint effort of group purchasing executives—like Mr. Neylon—and their operating departments. These are then submitted to the chairman of the group purchasing committee. He in turn assembles them in order of importance and turns them over to the gas engineering department of the system. After they have been studied and analyzed the department's standardization engineer prepares a "draft" identifying specification for all engineering approved material items of similar function. Included in these specs are lists of items (by manufacturer's name, types,

figure numbers, etc.) that meet the requirements or functional specifications.

These drafts are reviewed by the system purchasing department to see how they affect purchasing requirements. On occasion, the system material standards engineer will work with group operating personnel to reduce the number of items proposed as standards without restricting sources of supply.

Drafts then go to appropriate system operating committee members for acceptance, with or without revisions. Committee approval

(Please turn to page 90)

# 6-Man Purchasing Department

By Leonard Sloane

**T**EAMWORK is essential to efficient purchasing. No one is more keenly aware of this than Dave Rubin, director of purchasing at Blonder-Tongue Laboratories, Newark, N.J. manufacturers of industrial TV equipment and distribution systems. His efforts have been directed toward developing a "team approach" to purchasing ever since the company was founded eight years ago.

Including himself and his secretary, Mr. Rubin heads a six-man department. Although everyone has a specific job to do, every member of the department is qualified to perform another's job if an emergency arises.

Mr. Rubin and his assistant, John Fahey, coordinate purchasing activity at Blonder-Tongue and its affiliate, Electrocomp Inc. Al Piccirilli handles incoming traffic, Bert Marshall is the technical man and George Faccione takes care of expediting. Examples of their teamwork can be found in virtually every activity of the purchasing department.

## The Real Cost

For instance, Mr. Rubin wanted to determine the *real cost* to Blonder-Tongue of each item bought from a vendor. He wasn't satisfied with the assumption that a product's cost could be determined by merely looking at the column on the far right side of a purchase order. If \$10 is spent on expediting a \$4 item, the true cost isn't \$4, it's \$14.

"So I set up a system," Rubin says, "to determine our true costs. Whenever George Faccione does any expediting on an order, he staples carbons of all letters, telegrams and other notes he had to send to the back of his copy. He also keeps an accurate record of every telephone call that had



Electrocomp's Dave Rubin: "Every man in purchasing makes policy."

to be made in connection with the order.

"After he gets the receiving ticket confirming that the shipment has arrived, he routes all the data on the order over to John Fahey, who examines the attached papers before closing it out. He may discover that an order priced at \$100 may actually be costing us \$110 with all the time and paperwork involved. So if a supplier can sell us equal quality goods for \$105 and no expediting is required, we're actually saving money, aren't we?"

## Exact Delivery Date

Another example of teamwork at Blonder-Tongue is control of deliveries of purchased materials. Says Mr. Rubin, "we don't want suppliers to deliver their shipments early any more than we want them late. It costs us money in two ways when we get merchandise early: inventory carrying costs and faster payment of bills.

"So on our purchase orders, we've printed the words 'Delivery Schedule.' We type in the exact date we want the items delivered and we expect the supplier to get it here on that date. Receiving knows when the order should ar-

rive because the date is on its copy, and the package won't be accepted if it arrives early."

## Pre-production Analysis

Bert Marshall, the technical coordinator, is responsible for coordination between the purchasing and engineering departments. He serves also as the link between the vendor and the engineer, bringing them together when necessary to solve any problems.

Teamwork between purchasing and other departments is both practiced and preached at Electrocomp. Mr. Rubin is chairman of the budget and scheduling committee—whose members also include sales, accounting and production—and is on the new products committee. With the latter group, his skill and ability is used for pre-production purchase analysis.

"Before any item is brought into production, we get together and discuss it from all angles," he reveals. "Purchasing plays an important part there, as it does in the suggestion of new items to be manufactured."

Mr. Rubin is alert to the special skills possessed by his staff members and is quick to take advantage of them. For example, Mr. Piccirilli, an experienced traffic systems man, has complete control over routing all shipments to the plant.

"He notes on the purchase order not only the type of carrier, like rail or truck," says Mr. Rubin, "but also the name of the specific carrier to use. If the supplier uses another routing, we want to know why—because we've determined the cheapest method of getting it here consistent with our production schedules. Of course he may have a



# Sparks Growth of Young Company

good reason for the switch, but we want to know what it is. As with most of our dealings with them, we try to educate vendors how to do business with us."

Piccirilli checks outgoing shipment invoices too, even though they do not fall under the direct province of purchasing. "The savings he's made for us already are many, many times his salary," Mr. Rubin declares.

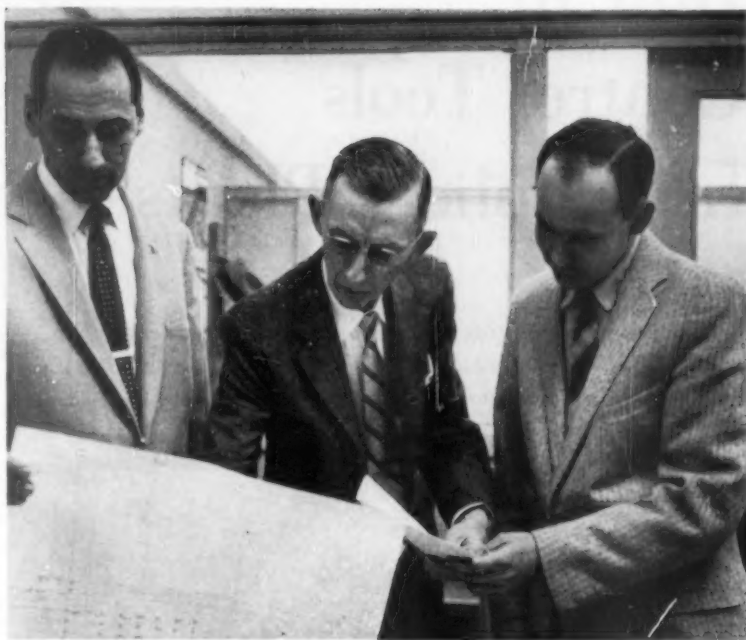
Mr. Faccone's administrative skills are also used to the best advantage of the company. "He keeps a 'run' book for every item we manufacture," says Mr. Rubin, "and always knows just what still has to come in or what's already arrived for each particular 'run.' When it gets close for a 'run' to start, George Faccone checks the book and gets busy rounding up those items that haven't arrived yet."

## Formal Training

Blonder-Tongue has an education and training program, which is utilized to the fullest by the purchasing department. "George Faccone took a purchasing course at Rutgers last year," recalls Mr. Rubin, "and the company paid the cost. This year, he's taking a business administration course there."

"You see, we intend to make our company a university, for we believe the learning processes never stop. I encourage all our personnel to take courses because growth in this profession requires constant education."

Another part of the training program is periodic evaluation of purchasing personnel. Mr. Rubin shows each man his rating sheet and discusses with him his strengths and weaknesses every time a new evaluation is made. "We do this to help him and bring



Purchasing personnel study all production schedules before planning their purchases. L. to r., Al Piccirilli, traffic coordinator; John Fahey, assistant purchasing agent; George Faccone, expeditor.

out more from him in order to encourage his own development," he notes.

A young, dynamic executive, Mr. Rubin is well-informed (his business reading at home averages an hour or two each evening) about purchasing in general and electronic purchasing in particular. Here's a sampling of some of his forthright views:

**Salesmen**—"There's a great number of young ones coming in today and that's good. I'd like to see even more technically qualified salesmen come around because electronics is such a new and dynamic field. I don't like a man who's just an order taker and I don't like the buddy-buddy guy who comes around just to talk. We see around 20 salesmen a day and we're too busy to just sit around and chat."

**Samples**—"We don't ask for samples indiscriminately. We only request them when really necessary. In general we don't pay for samples, but when some-

thing is made up specially for us and we have to, then we'll pay. We serve also as the clearing house for other departments that want samples."

**Vendors**—"We need them—their thoughts and ideas. And we don't just wait for someone to come and see us. We actively solicit vendors with problems we might have. After all, we deal with at least 1800 vendors a year. We know we can't live in an isolated vacuum."

**FOB**—"I always try to specify orders FOB vendor's plant. But I know that in some instances when we force a vendor to do this, it's reflected in his price. So we end up paying for it anyway."

Rubin's success in building a purchasing team has been responsible to a large extent for Blonder-Tongue's rise in the last eight years. It seems logical to assume that the company's future, too, will mirror in many ways what he calls "purchasing's interchange of ideas."

# How to Control Tools In Suppliers' Plants

*Proper accounting of tools held by suppliers serves your interest and your customers'. Here's a system that assures exact placement of responsibility for subcontract tooling.*

By C. D. Francisco

**PURCHASING** AT the Columbus, Ohio Division of North American Aviation, Inc. has a special tool control system designed in the interests of a special customer—the U. S. Government. It's just as valuable, however, in protecting North American's interests. And it can be easily adapted to your requirements if you have a fair amount of tooling in suppliers' plants.

The system's prime purpose is to provide accountability for all suppliers' special tooling. It begins with separate purchase orders for suppliers' tools. The orders carry basic data on tool location, cost, identification, description and other required facts. This information is then transferred to IBM cards which become permanent records. The cards are used to produce various reports on practically any type of tool information desired.

The special tools used by subcontractors are normally purchased outright and become the property of either the government or North American. They remain

at the subcontractor's plant for the duration of their use. Flysheets attached to all purchase orders spell out subcontractor's responsibility for accountability and identification of the tools in his possession. Special provisions are included in flysheets when exclusive use, rather than outright purchase is negotiated.

For segregation control, special tooling purchase orders are identified by prefixes numerically separated from ordinary purchases. A typical tooling purchase order contains North American's tool number, tool code, description and part number, plus the flysheet which becomes a part of the purchase contract.

Since the need for special tools is not known until an order for manufactured parts is negotiated, no requisition *per se* comes to purchasing. However, tool identification numbers are furnished to purchasing by a tool record section. When a purchase order for tools is originated, two copies go to the tool record section. A planning department in this sec-

tion key-punches an IBM tool control master card establishing contractual and cost data. This card then goes to an integrated data processing section for interpretation and distribution of additional cards.

From the master card a tool record card is developed and sent to purchasing and other departments for information, records and file. An additional card is sent to the planning department for their information, records and file.

Regular reports are drawn up weekly, monthly or quarterly. An example is a weekly vended tooling report. This report, illustrated here, shows the amount of dollar responsibility carried within one of five purchasing sections. It's easy to find out the dollar value of tools involved in each or several contracts, how many over \$1000, or any other statistics that may be required.

If purchasing wants to call in a tool, they pull the applicable IBM record card from their file and send it to the tool record sec-

Purchase order details tool information that is transferred to IBM cards.

**Tool Control Master Card provides variety of pertinent information from which reports are developed.**

**Tool Record Card**, interpreted from master card also functions as tool transfer order.

**Planning record card provides quick compilation of type, number and quantity of tools used on specific contracts.**

**Purchasing keeps an eye on budgeted tooling expense through weekly reports.**

tion, concurrently notifying the supplier to ship in the tool. The responsibility account is thus transferred to the tool record section. This leaves IBM cards in purchasing for only those tools for which purchasing is responsible and accountable.

Responsibility to the customer is further emphasized in the fact that North American can never dispose of any tools without the express permission of the government contracting officer. This permission is granted only when the contracting officer is satisfied that all contractual obligations of the subcontractor and North American are satisfied.

**Flysheet issued with purchase order is permanent part of contract.**

"PROPERTY" MARK.

1. Article IV, appearing on the face of Buyer's purchase order form is amended by the addition of the following provision:

a. SALESMAN'S REMARKS

Insurers shall be accompanied by a detailed list of the items to be supplied hereunder. This list must include (1) serial identification, (2) detail part number used, and (3) individual prices of each item.

b. PROOF OF SATISFACTORY WORK

Insurers for items will not be rendered until the items have been proved. Evidence of satisfactory service will be indicated by the Buyer's acceptance of a satisfactory part produced by such items, except as otherwise agreed to in this purchase order.

2. Article II, "Title, Risk, Basis, and Payment" appearing on the reverse side of Buyer's purchase order form is amended by the addition of the following provision:

a. PROPERTY

Not less than 60 days prior to any property of the Buyer or the Government to be furnished or a portion of the Buyer shall be an insurer. Buyer agrees to maintain adequate fire and extended coverage insurance coverage with responsible insurance company or companies.

b. IDENTIFICATION OF ITEMS

As directed by Buyer, Seller will permanently mark for identification by means of metal stamping, name plates or tags, using Buyer's control marking system, all articles purchased hereunder. It is understood that the markings assigned by Buyer to correspond with title identification of each item of each lot, the part or part numbers it will produce. Buyer's assigned work serial number, and, in every case, the words "Property of U.S."

c. PROPERTY - REMARKS ON REWORKED ITEMS

If the items purchased hereunder are to produce parts for Buyer's design, then each manufacturer of such parts for hereunder, Seller shall furnish Buyer on (1) Buyer's or responsible outfit of all work drawings including dimension and photographic negative of all items of tooling fabricated or purchased without metal design drawings.

- 4 -

U. S. GOVERNMENT PRINTING OFFICE: 1957 O - 281,000

Issued: 3/27/57

- 5 -

This document contains neither recommendations nor conclusions of the National Bureau of Standards. It is the property of the NBS and is loaned to your agency; it and its contents are not to be distributed outside your agency.



## ... because both recognize the Unusual benefits of Engineered Installation by Skilled Abrasive Engineers

Mid-West is one of only three abrasive companies offering customers a complete line of abrasive products: sandpaper, grinding wheels, honing stones, abrasive grain and grinding machines.

Highly trained abrasive specialists—backed by constant research and testing, and the production of six plants—are "on call" by anyone having abrasive problems . . . whether it be old applications, new set-ups or quality control. Your call will bring one of our skilled Product Development Engineers without obligation.

**MID-WEST ABRASIVE CO.**  
510 S. Washington St., Owosso, Mich.  
MANUFACTURERS OF GRINDING WHEELS, SANDPAPER AND HONING STONES

Mid-West Abrasive Co.  
510 S. Washington St.  
Owosso, Michigan

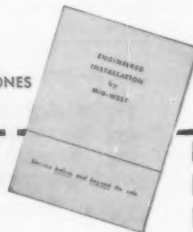
Please send me, without obligation, a copy of Engineered Installation by Mid-west.

Name \_\_\_\_\_

Company \_\_\_\_\_ Title \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



For More Information Write No. 188 on Inquiry Card—Page 32

## Products

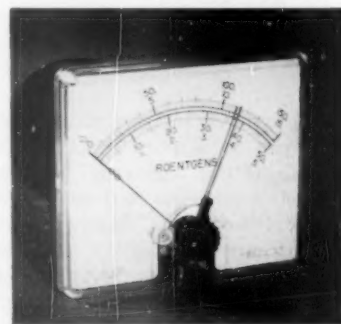
### Advantages of Canvas Tote Baskets



Canvas tote baskets are light in weight, easy to carry and can be nested inside one another without sticking. Store in small space. Made in two sizes—17 x 10 x 7" deep weighing 18 oz. and 20 x 12 x 8 3/4" deep weighing 24 oz. Water repellent Army duck over a tinned wire frame, with a completely washable plasticized canvas bottom. Strongly riveted double canvas handle is balanced so that the basket will not tip or become unwieldy when lifted with one hand. Handy Folding Pail Co., Inc., 17 Thompson Street, New York 13, N.Y.

Write No. 18 on Inquiry Card—Page 32

### Smallest Self-Contained Control Instrument



A minified control occupies the same panel space as a standard 4 1/2-inch indicating meter, and it mounts just as simply. All control components—including power supply, slave relays, interrupters, condensers and resistors—are housed in a round barrel 2 7/8-inch in diameter and approximately 4 3/4-inches deep. Provides con-  
(Please turn to page 66)

PURCHASING



# THE LARK BY STUDEBAKER LOWERS FLEET TRANSPORTATION COSTS FOUR WAYS

Here's why The Lark is already being hailed as the most practical dimension in motoring and how it can provide cost-conscious fleet owners with higher net profits. ➤ **LOWER INITIAL COST.** A fleet of smartly styled Larks saves money right from the start. They offer all the features of a conventionally sized car, full seating for six adults, yet Lark prices are lower! ➤ **LOWER OPERATING COSTS.** The Lark is designed for economy plus performance. With newly designed induction system and carburation on the L-Head "six," The Lark goes a *very long* distance between fuel stops. This is an improved version of the engine that recently broke NASCAR economy records. For higher performance, choose the V-8 engine. It, too, is extremely economical and, like the "six," turns in peak performance on low-cost, regular gas. ➤ **LOWER MAINTENANCE COSTS.** Lark design minimizes downtime and cuts maintenance costs. Engine parts, such as 4 massive main bearings and a new, stiffer crankshaft, are soundly engineered for longer wear. All components in the engine are simplified and easily accessible, making repairs faster—and cheaper. Bolt-on grille assembly and fenders reduce the cost of repairs to sheet metal in case of accident. ➤ **TAKES UP LESS ROOM.** The Lark is only 14½ feet long. Useless overhang has been eliminated so that every Lark saves almost 18 square feet of valuable garage and parking space.

THE **LARK** BY STUDEBAKER



THE LARK 2- AND 4-DOOR SEDANS. Excellent company cars. Reflect good taste and handle with effortless ease. The Utility Sedan features spacious flat area behind driver's seat for bulky merchandise or other material.

These other Larks will meet specific requirements.

**THE LARK STATION WAGON**—smart and practical. Converts to Panel Wagon with easily installed advertising panels.

**THE LARK HARDTOP**—Ideal rental car. Already a stunning success with demand exceeding production estimates.

**THE ECON-O-MILER**—A 113-in. wheelbase car that is ideal for severe-service conditions.

Without obligating myself, I would like to know more about the new dimension in fleet transportation.

MR. A. E. FITZPATRICK, Manager—Fleet Sales  
STUDEBAKER-PACKARD CORP./South Bend 27, Indiana

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

ZONE \_\_\_\_\_

STATE \_\_\_\_\_

P-12-22-58

# AMERICAN LaFRANCE

## A SINGLE SOURCE for the BEST in Industrial Fire Protection

### EXTINGUISHERS and ENGINES



#### Dry Chemical

Extinguishers: 2, 5, 10, 20, 30 lb. Engines: 150, 350 lb.



#### Water and Anti-Freeze

Extinguishers: 2½ gal. Pump Tanks: 2½, 5 gal. Engine: 40 gal.



#### Foam

Extinguishers: 2½, 5 gal. Engine: 40 gal.



#### Carbon Dioxide

Extinguishers: 2½, 5, 10, 15, 20 lb. Engines: 50, 75, 100 lb.



#### Soda-Acid

Extinguishers: 2½ gal. Engine: 40 gal.



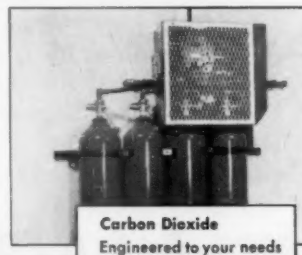
#### Vaporizing Liquid

Extinguishers: 1, 1½ qt.

Whatever the fire hazards, large or small . . . whatever Underwriters' Classification they fall into . . . American LaFrance has precisely the *size* and *type* of equipment to provide maximum protection with maximum speed and safety in operation.

Shown on this page are just a few of the approved extinguishers and other items of fire protection equipment available from American LaFrance.

For detailed information on industrial fire equipment, send for our free CATALOG 571 . . . containing the famous *American LaFrance Fire Extinguisher Characteristics Chart* (now a standard reference for the fire protection field).



Carbon Dioxide  
Engineered to your needs

### FIXED SYSTEMS

Foamite  
10 to 160 gal. capacity

Foamite Airfoam  
Nozzles, liquid and  
fixed systems.



Hydrostatic Test Pumps

Respiratory and First Aid Equipment



# AMERICAN LaFRANCE

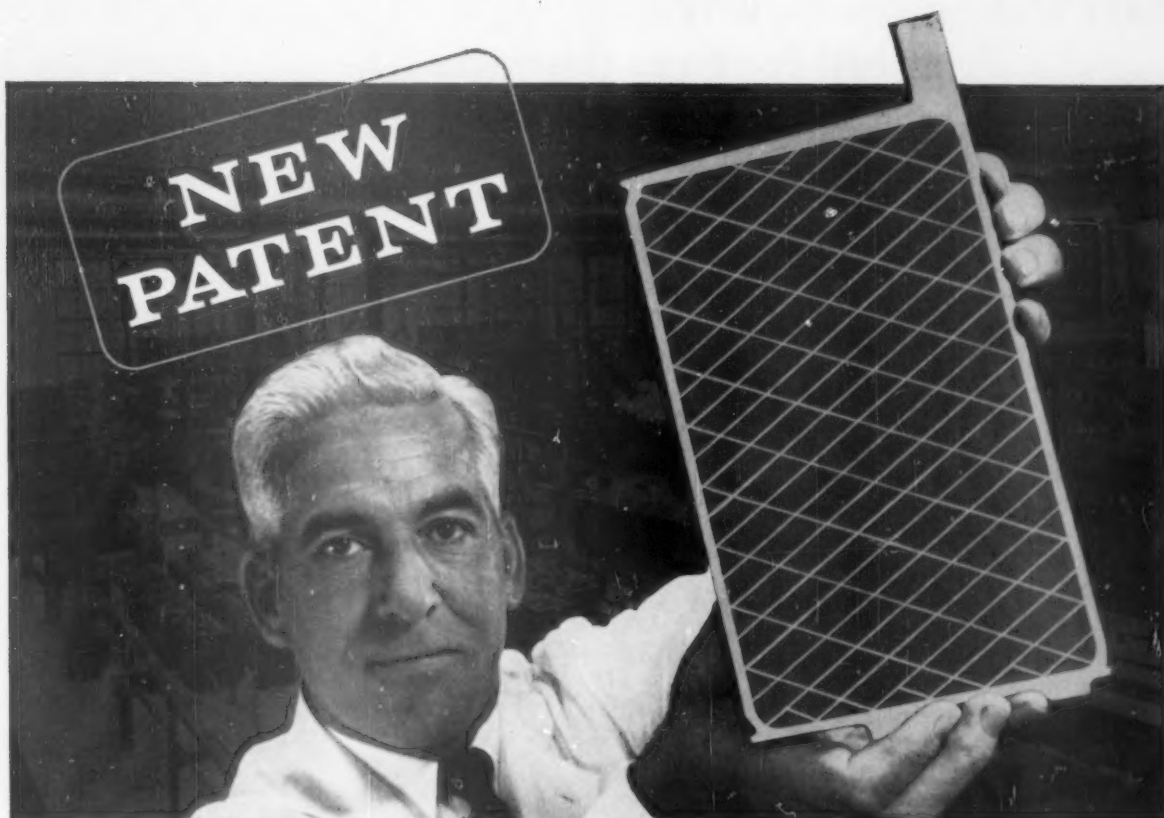
DIVISION OF STERLING PRECISION CORPORATION

ELMIRA, N. Y., U. S. A.

In Canada, LaFrance Fire Engine and Foamite, Ltd., Toronto, Ont.

**WORLD'S LARGEST MANUFACTURER OF FIRE FIGHTING EQUIPMENT**

For More Information Write No. 190 on Inquiry Card—Page 32



## The New **gould** *SILCONIC* Plate Lengthens Battery Life 10-25%

### Two distinct improvements:

1. Gould has developed a new patented (July 1958) process for introducing Silver-Cobalt into the active materials of the positive plates of Motive Power Batteries.

The temporarily soluble silver-cobalt sulphates, when added to the active materials, migrate to all positive grid members.

The Sulphates collect on the grid members to form an insoluble oxide surface or protective sheath which is impervious to acid and oxygen attack.

2. In order to insure a homogeneous grid completely free of flaws, a carefully determined amount of arsenic is added to the regular metal. This produces a smooth flowing metal during the casting operation which results in an extremely dense and uniform grid.

By selectively adding the silver-cobalt and arsenic to the plate, Gould is able to produce the new *SILCONIC* positive plate . . . a Gould exclusive.

**HOLDS CHARGE LONGER.** In those applications where batteries are idle for periods of time the *SILCONIC* Plate is ideal. This Silver-Cobalt coating prevents migration of materials to the negative plate, effectively reducing self discharge within the cell.

**MIGRATION OF SILVER-COBALT ATOMS.** The migration of Silver-Cobalt atoms continues throughout battery life, offering continuous resistance to the corrosive attack of acid and oxygen. This continuous effect is the result of a solid state migration of the Silver-Cobalt which penetrates deeper and deeper into the grid metal during battery operation, thus prolonging the life of the *SILCONIC* Plate.

**LONG-FULL SHIFT OPERATION ASSURED.** Comparative tests between *SILCONIC* and conventional plates prove that the *SILCONIC* Plate maintains maximum capacity for a considerably greater portion of its service life, retards the tendency toward grid growth, assures longer full shift operation of batteries.

Write for complete data or call your local Gould representative. He's listed under "Batteries Industrial" in the yellow pages. Gould-National Batteries, Inc., Trenton 7, N. J.

Gould Industrial Truck Batteries with *Silconic* Plates resist corrosion, hold their charge and last longer.



*More Power to you from Gould*

## COTTON\* pays its way at toll road restaurants



\*Fairfax Toweling used by these Glass House restaurants are supplied by Elkhart Clean Towel Service, Elkhart, Ind.

● Every thirty miles a Glass House restaurant—that is how travelers are served on the Northern Indiana Toll Road. The ten restaurants operated by The Interstate Company provide delightful stopping points along this major East-West artery, and are outstanding in cuisine, service, design and furnishings.

With their emphasis on service and personnel, it is hardly surprising to note that Interstate has provided cotton toweling in all employee washrooms. Management reports "washrooms always kept neat and clean... with the use of toweling."

No doubt you can use this neatness plus in your plant, building or institution. It goes along with reduced maintenance cost, reduced fire hazard. Get all the facts about all the advantages of cotton towel service. Write for free booklet, Fairfax, Dept. S-12, 111 West 40th St., New York 18, N. Y.

### Here's How Linen Supply Works...

You buy nothing! Your linen supply dealer furnishes everything at low service cost—cabinets, pickup and delivery, automatic supply of freshly laundered towels and uniforms. Quantities can be increased or decreased on short notice. Just look up LINEN SUPPLY or TOWEL SUPPLY in your classified telephone book.

### Clean Cotton Towels...

*Sure Sign of Good Management*

**Fairfax Towels**



WELLINGTON SEARS COMPANY, 111 WEST 40TH ST., NEW YORK 18, N. Y.  
For More Information Write No. 192 on Inquiry Card—Page 32

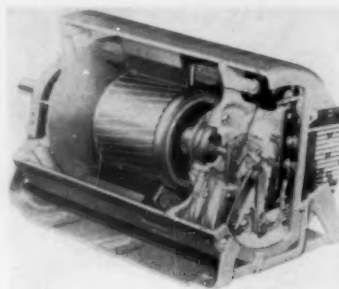
## Products

(Continued from page 62)

tinual signal indication and when preset limits are reached, it triggers control action by appropriate equipment. Either high or low signal limits may be set by adjusting fixed pointers. Signals from virtually any variable may be controlled, usually without amplification. Assembly Products, Inc., Chesterland, Ohio.

Write No. 19 on Inquiry Card—Page 32

### Motor Ends Contamination Caused Failures



Totally encased controls are in this single phase motor. Cutaway shows capsule inside end-bell, with phantom of capacitor. Capsule contains sealed switch assembly, starting capacitor, thermostat, terminal board—protecting them from air stream. Starting switch has self cleaning scissor action "anti carbonization" alloy contacts and is actuated by governor through nylon button. Distance between bearing centers has been reduced, improving concentricity and minimizing electrical noise. Prelubricated and sealed ball bearing are made to low noise specs and are locked to shaft, limiting end play to tolerances within bearing. Rotor is shrunk fit to shaft. Available in general purpose 56 frame with rigid base—1/3 through 1 1/2 hp; also as blower motor in 56 frame with resilient base—1/3 through 2 hp. Capacitor is mounted on top of frame in motors over 1 1/2 hp. No premium charge: prices are comparable with open fhp motors. Electric Motor Division, A. O. Smith Corp., Tipp City, Ohio.

Write No. 20 on Inquiry Card—Page 32

For More Information Write No. 193  
on Inquiry Card—Page 32→

PURCHASING







***Strong  
Restraining Influences...  
Roebling Hose  
Reinforcing Wire***

Roebling Hose Wire, Hose Reinforcing Wire and Hose Wrapping Wire bear the stamp of Roebling's strict attention

to constant uniformity. As with all Roebling wire products, each is wholly Roebling-made and Roebling-controlled, from open hearth to packaging. Tensile strength and forming qualities, finish and gage are of an excellence that proves itself in use.

Resistance to internal and external pressures and wear are what you look for in hose wires and what you pay for. With Roebling, you get them.

For further information on these and other Roebling quality products, write Wire and Cold Rolled Steel Products Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

*Roebling...Your Product is Better for it*

**ROEBLING**

Branch Offices in Principal Cities  
Subsidiary of The Colorado Fuel and Iron Corporation



## The Arithmetic of Materials Handling



Developed by Fuller, American Sugar's new Airveyor Bulk Transport Trailer permits high speed, low cost loading and unloading of Domino sugar.

## AMERICAN SUGAR DELIVERS IN BULK WITH NEW FULLER **AIRVEYOR** TRANSPORT

When American Sugar Refining Company recently turned to Fuller-Airveyor Bulk Transport Trailers for delivering sugar to the Long Island City plant of Louis Sherry Preserves, Inc., they not only eliminated bag-handling, but also did away with lift trucks, scrolls, bucket elevators, and many wasted man hours.

One man now unloads 30,000 pounds of Domino bulk sugar in less than a half hour — and stores it 150 feet away. The Airveyor Bulk Transport Trailer does all the work. Waste and contamination are eliminated.

Fuller Airveyor Bulk Transports, like this, can be designed and built for a wide variety of dry, finely divided and

coarse granular materials from powders to pellets: sugar, starch, malt, grain, and lime, to mention only a few. The only investment required by a customer to receive material pneumatically is a storage bin and two pipe lines.

If you are now handling dry, granular materials, it will pay you to look into Fuller pneumatic conveying systems. Fuller systems are engineered specifically for your particular application. They bend around corners, run up or down, through walls and floors, almost any distance — even underground. Write or phone today outlining your problem. Fuller will gladly furnish additional information with appropriate recommendations.



LOUIS SHERRY'S STORAGE BIN for sugar, 150 feet from truck, atop Long Island City plant.



# Fuller

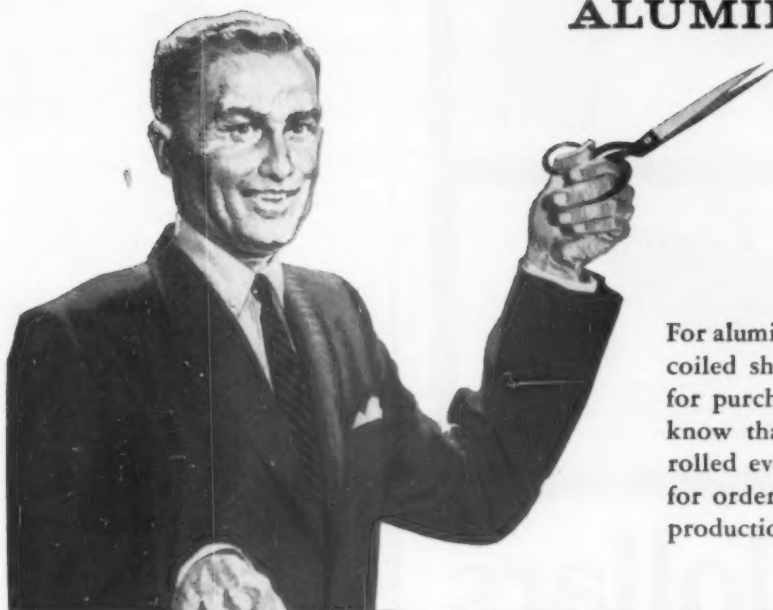
pioneers in harnessing AIR

**FULLER COMPANY**  
170 Bridge St., Catasauqua, Pa.

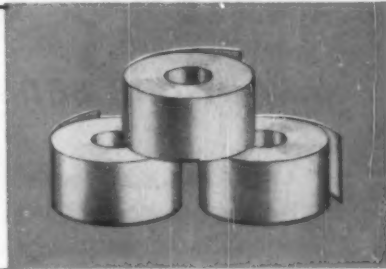
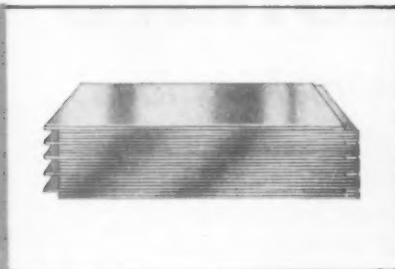
SUBSIDIARY OF GENERAL AMERICAN TRANSPORTATION CORPORATION  
Birmingham • Chicago • Kansas City • Los Angeles • San Francisco • Seattle

*"See Chemical Engineering Catalog for details and specifications".*

# Cut Dollars Out OF FAIRMONT ALUMINUM SHEET



For aluminum sheet in any form—flat sheet, coiled sheet or circles—those responsible for purchasing and manufacturing should know that every alloy Fairmont offers is rolled every working day . . . no waiting for orders to accumulate for scheduling a production run.



## *This Means:*

- Less delivery lead time between ordering and shipment—speeding delivery and close integration with other production elements. Overnight delivery is frequently possible.
- Manufacturing inventories are kept low, reducing investment in floor space and work in progress.
- Fabricators' change orders, if necessary, may be executed rapidly and economically.



For a free copy of Fairmont's latest technical bulletin, write or call today.

Fairmont's customized attention to all orders, both large and small, has merited an association with an ever growing list of customers over the past 32 years.

Sales Offices in Principal Cities

# FAIRMONT ALUMINUM COMPANY

SUBSIDIARY OF CERRO DE PASCO CORPORATION  
Dept. U-6 • FAIRMONT, WEST VIRGINIA

### BEFORE...

Appliance manufacturer installed leg leveling bolt; used square head fastener in crating.



### AFTER...

Circle B leg leveling bolt designed with Phillips head, at no extra cost, now does both jobs.



# save dollars

*with this sense-making idea*

**LITERALLY** thousands of dollars can be saved through the practical application of basic bolt making principles in designing and specifying fasteners.

In the actual case shown, savings were pyramided through reduced inventory, handling, purchasing and production time; while one part was eliminated entirely.

To make this basic information available, Buffalo Bolt Company has drawn on over 100 years of experience to put together a digest of these principles.

You'll find them in our new booklet, "How to specify fasteners . . . and save". Filled with drawings and charts, it makes a handy guide in designing or buying any headed parts.

If you can use a copy, write to North Tonawanda or ask a Field Representative.



## BUFFALO BOLT COMPANY

Division of Buffalo-Eclipse Corporation

North Tonawanda, N. Y. • Princeton, Illinois

MAKING BOTH FASTENERS AND FRIENDS FOR 100 YEARS

• 3 convenient service centers

**WESTERN OFFICE**  
Chicago  
Harrison 7-2178

**EASTERN OFFICE**  
New York City  
REctor 2-1888

**CENTRAL OFFICE**  
North Tonawanda  
Jackson 2400 (Buffalo)

For More Information Write No. 196 on Inquiry Card—Page 32

## Products

### Thermocouple Offers High Safety



Heavy-duty, fast-responding thermocouple consists of a heavy protecting tube containing two #8 B&S gage wires completely embedded in solid ceramic. PermaKouple offers high safety for costly furnaces and products. Tightly packed ceramic insulation (aluminum oxide) prevents corrosion or scaling of the wires and eliminates the danger of flash fires in the event of a burn-through. Should the tube burn through, the ceramic pack will preserve a vacuum or keep poisonous fumes from escaping through the thermocouple tube. The hard ceramic pack forms a solid core, which together with the extra-heavy wall (Schedule 60 instead of the conventional Schedule 40) makes PermaKouple sag-free: will remain straight and rigid for an indefinite period in temperature up to 2200°F and can easily be removed from a furnace without damaging the wall. E. C. Smith Mfg. Co., Forrest & Hector Sts., Conshohocken, Pa.

Write No. 21 on Inquiry Card—Page 32



"Whoever caught this one knows it pays to use quality equipment . . ."

PURCHASING





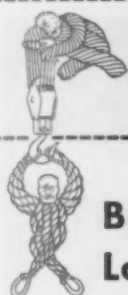
**NOW...AT INLAND...500,000 ADDITIONAL TONS CAPACITY FOR COLD ROLLED SHEET PRODUCTS . . .**

a half-million more tons of the same uniformly dependable steel that has made *Inland Quality* the recognized standard among manufacturers throughout the great Midwest. Inland's giant, new 4-stand tandem mill, most powerful of its size in the industry, is part of Inland's program of expansion, keeping pace with the growth of Midwest manufacture. New pickling, continuous normalizing, annealing and tempering facilities do their part in producing this quality steel for your use. This new capacity means better service for you from Inland.



**INLAND  
STEEL  
COMPANY**

30 West Monroe Street • Chicago 3, Illinois  
Sales Offices: Chicago • Milwaukee • St. Paul  
Davenport • St. Louis • Kansas City • Indianapolis  
Detroit • New York • Houston



**Tuffy.  
Tips  
On**

## SAFE USE OF SLINGS AND HOIST LINES

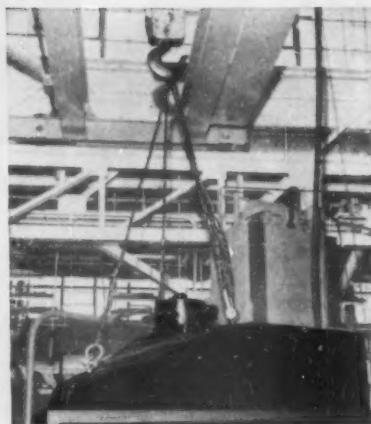
### Back Injuries and Strains Loom Large in Industrial Accident Picture

Records for recent years in Illinois, as reported by the State Department of Labor, show an average of 8.9% of all compensation cases closed are for back injuries; another 7.4% for strains and over-exertion in lifting or lowering. A total of about one in every six claims are for these two categories of injury.

How can we reduce materials handling accidents? The first answer, of course, is not to use human muscle for the heavy lifting jobs that should be done by the proper size hoist, hoist line and slings.

#### Here are some other answers:

1. **Keep pull** on sling legs in a straight line. Never shorten legs with knots or I-bolts. If choker and basket hitches are used as slings, safe load limits should be rigidly checked.
2. **Load slings** on the center of hooks; never at their points, except for hooks specially designed for point-loading.
3. **Never use** load hooks that are bent open. They have been overloaded, and may drop loads with disastrous results. Same goes for defective chain blocks. Insist that your men report them at once.
4. **Lubricate wire** ropes at regular recommended intervals, with lubricant recommended by your local oil company engineer.
5. **Break in** new wire rope with care. Don't use it as maximum load capacity until it is broken in.



#### Bad Use of a Good Sling

Here you see a Tuffy Sling in a poor, off balance hook-up. A Tuffy Type U-9, 3 leg bridle Sling would save time and work far more safely than this improvised hitch with unfitted slings and clevises.



#### Right and Wrong Ways to Uncoil Wire Rope

##### RIGHT:

Wire rope in short lengths is furnished in coils. Roll the coil slowly like a wheel and have a nice straight rope before you can say "tuffy."



##### WRONG:

Uncoiling by laying the coil flat and pulling off the top gives you hard-to-handle, kinky rope. Frustrating and time-killing!

#### FREE! Tuffy Sling Handbook

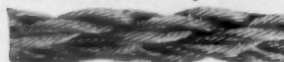


Gives complete data on Tuffy Slings—types, dimensions, weights and rate loads. Plus a complete rigger's manual and engineers notebook on wire rope constructions and specifications. Write for your copy now.

### Get Safety First With The First Name In Slings...

**Tuffy.**

#### Exclusive Tuffy Fabric



The secret of the extra strength and greater flexibility of Tuffy Slings is also the secret of their greater safety. It's the exclusive, patented, machine-braided fabric. You won't find it in any other machine-made sling. It means longer sling life, easier handling and greater capacity for taking deadloads, shocks and impact with safety.

#### Try to Kink a Tuffy Sling



It's next to impossible. Even if you do succeed in kinking it with the help of a vise, you can straighten out the sling with no material damage to the fabric. Tuffy's resistance to knotting, kinking and looping is extra protection against hazardous weakening of the sling.

#### Tuffy's Pressed-On Ferrule



Here's another Tuffy feature that adds safety to longer sling life. Applied under tremendous pressure, the steel ferrule literally flows into spaces between wires and strands—giving the eye-splice full strength of the fabric. And the streamlined ferrule eliminates snags and projections that might injure hands.

#### Your Tuffy Distributor is Stocked to Meet Your Needs—Fast!

He's ready with all your Tuffy Slings and Union Wire Rope needs. And ready to help you with any sling or wire rope problem. Get in touch with him now!

**union Wire Rope corporation**

SUBSIDIARY



STEEL CORPORATION

Specialists in high carbon wire, wire rope, braided wire fabric, stress relieved wire and strand.

2282 Manchester Ave.

Kansas City 26, Missouri

# TIMKEN®

## NEWS

about

# BEARINGS

Custom-built lift trucks and floor chain conveyors keep the bearings flowing, get them to you faster, packed as you want them.

### FIVE PLANTS + ONE SHIPPING CENTER = WORLD'S FASTEST BEARING SHIPMENTS

Because Timken® tapered roller bearings produced in five plants all meet at a revolutionary, new Shipping Center at Bucyrus, Ohio, you're protected from any shutdown in one plant. You get a new high in protection for your bearing requirements. With over 12,000,000 parts in stock, we're ready to ship your bearings when your order comes in. And your entire order of bearings up to 14" O.D. comes from one point, consolidated and shipped the way you want it, simplifying your purchasing.

Using the latest electronic data processing equipment, as part of the new system, we can acknowledge most of your orders—with a shipping date—within twenty-four hours. And invoicing is quicker, too. The Timken Company's new integrated system is another example of the pioneering that makes Timken bearings your No. 1 bearing value. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable: "TIMROSCO".

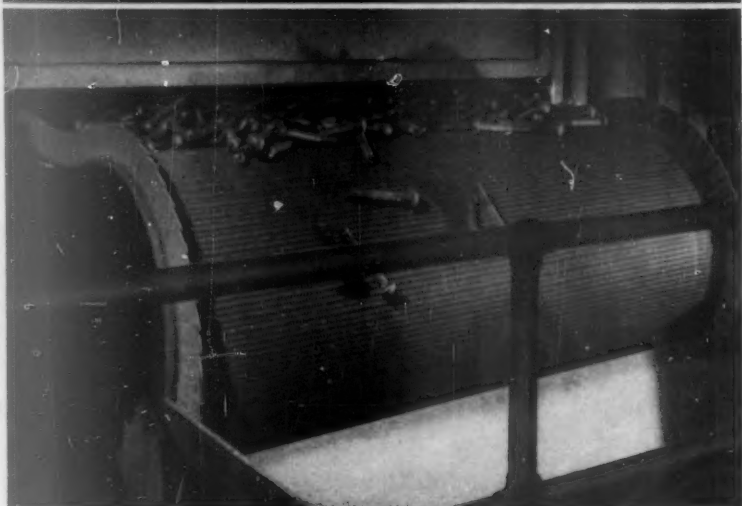


#### When you buy Timken® bearings you get...

1. Quality you can take for granted
2. Service you can't get anywhere else
3. The best-known name in bearings
4. The pace setter in lower bearing costs



*Call Cambridge for*



## WOVEN WIRE CONVEYOR BELTS for continuous processing

By combining movement with processing, Cambridge Woven Wire Conveyor Belts can help cut operating costs, maintain high product uniformity and increase production. Open mesh provides free air, liquid circulation for quick, thorough treatment of products. All-metal construction is heatproof, cold-proof, rustproof. Nine basic weaves available in any size or mesh. Belts can be woven from any metal or alloy to take up to 2100° F. or sub-zero temperatures, yet resist attack from water, acid or caustic solutions. Lack of seams, lacers or fasteners mean long belt life, less maintenance. Special surface attachments or raised edges available. Let your Cambridge Field Engineer recommend the belt design best suited to your needs.

## WIRE CLOTH in Bulk or Fabricated Parts



Prompt service and delivery on industrial wire cloth in 9 basic weaves, any metal or alloy, from finest to coarsest mesh. Complete stock on most frequently used types of cloth for your bulk needs. Individual loom operation and careful inspection provide mesh size, uniformity and accurate mesh count. For fabricated parts, we'll work from your prints or draw up prints for your OK. Call your Cambridge Field Engineer for information, assistance.

## GRIPPER® WOVEN WIRE SLINGS for materials handling



Unique woven wire construction grips better, reduces load damage, increases safety and lasts longer. Broad bearing surface gives exceptional load stability. Can be used in basket hitch or choke hitch. Won't whip, kink or tangle. Pretested and guaranteed to meet load specifications. In standard lengths or widths—capacities up to 100,000 lbs. Special sizes, alloys, PVC or Neoprene coverings on request.

Write Direct For These  
Helpful Reference Manuals



**The Cambridge Wire Cloth Co.**

WIRE  
CLOTH

METAL-MESH  
CONVEYOR  
BELTS

WIRE  
CLOTH  
FABRICATIONS

Department AK,  
Cambridge 12  
Maryland

Woven Wire  
Conveyor Belts  
Wire Cloth  
Gripper Slings

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

For More Information Write No. 200 on Inquiry Card—Page 32

## Products

### Plastic Drum Vent Has Advantages



A plastic Drum Vent is designed to eliminate costly waste and damaging spillage. Constructed to allow smooth liquid flow, it eliminates liquid evaporation and contamination. Adaptable for 3/4 inch or 2 inch faucet openings; easily installed when drum is ready for use; fitted with tapered pipe thread for adjustment. Has a directional arrow indicator to insure that vent is properly located in drum's air space. Made of polyethylene, it is non toxic. Durable construction insures long and continuous use. Plastiline, Inc., 2 Intervale St. White Plains, New York.

Write No. 22 on Inquiry Card—Page 32

### Powder Metal Bearings, Cheaper



Powder metal bearing, made from ferrous-base composition, will cost less than comparable bearings now made from porous bronze. The reason: a 4 to 1 cut

(Please turn to page 78)

PURCHASING



*made to order for converters...*

# GATOR HIDE® KRAFT

For coating, gumming, envelope, saturating, laminating, multiwall sacks, twisting ... or as base stock for any converted product, specify GATOR HIDE® kraft.

GATOR HIDE® is quality-controlled from forest to finished product—made to give you top converting efficiency.

And when you specify GATOR HIDE® you get the services of our technical staff to help you with any production problem. Call us.

*your most dependable source of supply...*

**INTERNATIONAL  
PAPER**

SOUTHERN KRAFT DIVISION  
NEW YORK 17, N. Y.





**one call from you . . . and they're on your staff !**

And they'll bring with them a nearby source of Carpenter tool, stainless and alloy steels. Actually they form just one station in a network that has built itself into a large chain of service-centers by offering and delivering the steels you need when you need them. Make that one action-getting call now. It will pay off in new operating flexibility for you. Just like having a complete warehouse in your own plant. The Carpenter Steel Company, 182 W. Bern Street, Reading, Pa.

***Carpenter*** **STEEL**

**mill-branch warehouse service**

mill-branch warehouses, offices and distributors in principal U. S. cities  
consult your local telephone directory

For More Information Write No. 202 on Inquiry Card—Page 32

# SPECIFY

# DC



## DISCOVER A World of Difference IN SHIPPING SERVICE

Yes, when you try D-C, you open the door to a whole new world of shipping convenience. You benefit from . . .

- Exclusive, one-carrier DIRECT service from coast-to-coast.
- Fast, 2-man sleeper cab service that goes straight through, with no transloading. Saves up to 20% in running time.
- One-carrier responsibility, one-carrier control of your shipment from pick-up to delivery—with experienced personnel, modern equipment and facilities ALL THE WAY!
- Dependability resulting from consistently careful, swift handling of your shipments.

Discover this NEW WORLD of shipping service for yourself. Mark your next shipment and your next order "D-C."

# DC

ONE  
STEP  
ACROSS  
THE  
NATION



**DENVER CHICAGO TRUCKING CO., INC.**  
THE ONLY COAST-TO-COAST CARRIER



### TERMINAL CITIES

Albany, New York . . . UN 9-8416	Los Angeles, Cal. . . . AN 1-0241
Buffalo, New York . . . RE 3910	Nashville, Tenn. . . . CH 2-5284
Chicago, Illinois . . . LA 3-7440	New York, New York . . . LO 4-3320
Cleveland, Ohio . . . SH 9-1666	(N. Bergen, N. J.) . . . UN 3-0900
Colo. Springs, Colo. . . ME 2-1486	Owensboro, Kentucky MU 3-5363
Denver, Colorado . . . DU 8-4567	Phoenix, Arizona . . . AL 8-5321
Detroit, Michigan . . . VI 3-9305	Pueblo, Colorado . . . LI 3-4425
Evansville, Indiana . . HA 3-6487	St. Louis, Missouri . . . CH 1-7830
Kansas City, Mo. . . . HU 3-9343	Seattle, Washington . . MA 4-3850
Louisville, Ky. . . . ME 6-1361	Syracuse, New York . . GR 1-4103

<sup>1</sup>DC operators of Eck Miller—Terminal Cities

### OFF-LINE SALES OFFICES:

Atlanta	**Indianapolis	**Rock Island, Ill.
Boston	*Milwaukee	San Francisco
*Cincinnati	Philadelphia	South Bend, Ind.
*Dayton	*Portland, Ore.	**Toledo
**DeKalb, Ill.	Rochester, N.Y.	Washington, D. C.
*Ft. Wayne		

\*With Trailer Pool

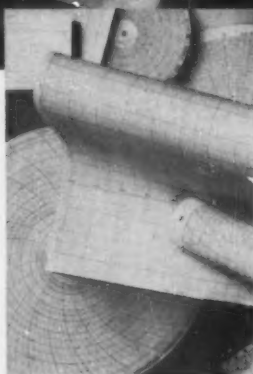
\*\*Trailer Pool Only

**WE ADVISED PURCHASING TO  
SPECIFY TECHNICAL CHARTS FOR ALL OUR  
RECORDING INSTRUMENTS!**



### **Fast, economical service for precision charts!**

Technical eliminates the problem of purchasing circular and strip charts from many different sources... offers you *one* source for over 12,000 different sizes and "makes" of charts. You get quicker service, lower costs, other advantages made possible by specialization.



### **Over 3,000 firms use Technical Charts!**

Both large and small firms from coast to coast use Technical's specialized service. Many arrange for periodic shipments of annual requirements.



## **TECHNICAL SALES CORPORATION**

16599 Meyers Road

Detroit 35, Michigan

*National Representatives for*

STAEBLER & BAKER, INC.  
Clayton, N. Y.

TECHNICAL CHARTS, INC.  
Buffalo, N. Y.

For More Information Write No. 204 on Inquiry Card—Page 32

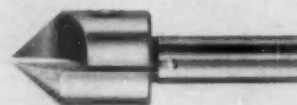
## **Products**

(Continued from page 74)

in the cost of constituent materials. New bearings have performance equal to porous bronze. Can be used on products where corrosion is not a problem and mechanical strength requirements are within tolerable limits. Suggested uses: bearing and bushing applications on home appliances, fractional horsepower motors, power tools, light machinery, instruments, light vehicles, communications equipment and other products. Especially suitable for oscillating and reciprocating motion where the nature of the movement prevents the build-up of an oil film. Amplex Division, Chrysler Corp., P.O. Box 2718, Detroit 31, Mich.

Write No. 23 on Inquiry Card—Page 32

### **Countersink for Burr-Free, Chatterless Performance**



Easy-sharpening, countersink gives burr-free, chatterless performance in a wide range of materials, both metal and plastic. Thus, with one tool doing the work of many, savings can be substantial.

Sharpening is simple and is easily done by using a straight cylindrical grind similar to the process involved in grinding a lathe center. There are no relief or clearance angles to contend with.

Made of high quality HSS, the tool is of solid, one-piece construction with a slot cut back from the tip of the cone forming two cutting edges. Different clearance angles are easily developed by tightening a screw compressing the two sides. Madison Relco Tool Co., Providence, R. I.

Write No. 24 on Inquiry Card—Page 32  
For More Information Write No. 205  
on Inquiry Card—Page 32→

**PURCHASING**



# Nothing gets by

Automatic end-point testing

device developed by

Standard Oil research men

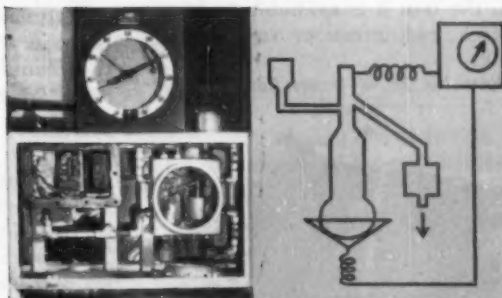
makes certain of the

uniform quality of gasoline and  
diesel fuel delivered to you.

Scientists at Standard Oil never stop in their drive to improve and then improve again the uniform quality of the petroleum products that bear the Standard Oil trade-mark. These engineering research scientists have now created wholly new instruments for performing near continuous physical analysis *automatically*.

**One such instrument** automatically performs the physical analysis that determines end-point. Using it, refineries maintain a continuous inspection of the temperature at which gasoline and diesel fuels are completely distilled. To you, this means that Standard is able to maintain a constant control over the uniformity and high quality of (1) the fuels you burn for heat or use to power your diesel engines and (2) the gasoline for your truck and passenger car fleets. It also means that Standard Oil power- and heat-producing petroleum products, with their constantly controlled end-point, burn uniformly, give you uniform high performance.

This is part of the research pay-out, the "something more" research builds into the products you buy from Standard. This is your return from Standard's investment in research. And now there are 48 district offices in the 15 Midwest and Rocky Mountain states to serve you. Call the one nearest you. **Standard Oil Company (Indiana)**, 910 South Michigan Avenue, Chicago 80, Illinois.



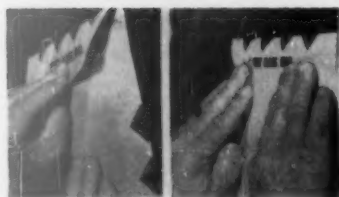
Automatic end-point tester works this way. A small sample is placed in an electrically heated flask. The temperature is measured and recorded during a heating cycle when distillation is accomplished. Distillate is condensed and drained, the flask temperature is lowered by introduction of the next sample, and the apparatus is ready for another test.

You expect more from



and get it!

# Office Equipment and Supplies

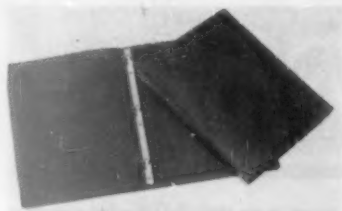


Mailroom problems caused by bulky envelopes can be eliminated with the use of a new moistureless latex envelope closure. Developed by the **Tension Envelope Corporation, Suite 566, 19th and Campbell, Kansas City 8, Missouri**, the envelope has a latex gum applied to the seal flap and back of the envelope which welds immediately when the two strips are pressed together. Called Touch 'n Seal, the envelope also incorporates the post office approved first class border which assures the mailer of the class of postal service for which he has paid.

Write No. 25 on Inquiry Card—Page 32

**Autopoint Company**, a division of **Cory Corporation, 3200 Peterson, Chicago, Ill.** recently announced the introduction of the new Cargo-Pen. Designed to reduce expenses since it contains three times more ink, the new pen has a visible barrel with banker and government approved ink. With the ink supply always visible the user can never run out of ink accidentally. Packed one dozen to the box it is available in blue-black, red, green or reproducing inks.

Write No. 26 on Inquiry Card—Page 32



A flip of the thumb opens and closes this new three ring binder mechanism. Ring metal can be used with paper, plastic or leatherette covers. Ring is  $\frac{3}{8}$ " capacity. **Forbes Products Corp., 625 S. Goodman Street, Rochester, N. Y.** is the manufacturer.

Write No. 27 on Inquiry Card—Page 32

A folder describing the **Univac high-speed printer**—which prints data processed by the large-scale system—has been announced by **Remington Rand division of Sperry Rand Corporation, 315 Fourth Avenue, New York 10, N. Y.** The machine operates at speeds up to 600 lines a minute, printing numbers, letters, and punctuation marks on a line 130 characters wide. A special fast-feed feature advances the paper rapidly over areas where no printing is required, thereby making it possible to print paychecks for 7,500 employees in less than an hour. Copies of folder U189 are available from the company.

Write No. 28 on Inquiry Card—Page 32



A new automatic eraser, the Eras-O-Mat, works on a single standard flashlight battery. It comes complete with four erasing tips to erase typing, ink, pencil, crayon, newsprint, etc. and two cleaning brush attachments. A high speed motor insures a perfect, clean, pin-point erasure. **B. Altman Products, 518 Miller Avenue, Freeport, New York** is the manufacturer.

Write No. 29 on Inquiry Card—Page 32

A new electronic communication system is being produced by **Alden Systems Co., Alden Research Center, Westboro, Mass.** This system of order writing simplifies and speeds up order organization and order dispatching. It enables the instant organizing of an order, a part or item list, "make" instructions, packing slips, invoices, and shipping labels. The information is dispatched instantly to any department via facsimile. The system speeds communications, integrates business systems, and can control transactions.

Write No. 30 on Inquiry Card—Page 32

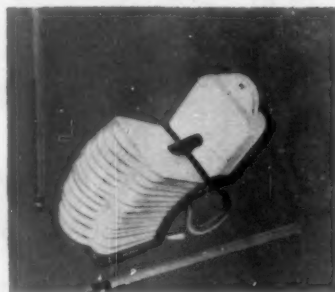


A new marking pencil, made in black and five other colors will write legibly on any surface. Manufactured by **Koh-I-Noor Pencil Company, Inc., Bloomsbury, N. J.** the pencil has a specially compounded "lead" which leaves legible markings on cellophanes, plastics, heavily waxed cardboard and wood. It sharpens as readily and holds its points as steadily as a graphite pencil. It is packed 12 to the box; all in the same color.

Write No. 31 on Inquiry Card—Page 32

Three new time card racks, specifically designed to hold standard tabulating card sizes, are now available from **Cincinnati Time Recorder Co., Cincinnati, Ohio.** Each rack holds as many as 25 cards and is designed for offices and factories using tabulating equipment in payroll computation. The racks may be mounted either singly or in batteries of one hundred or more. The card sizes are  $3\frac{3}{8}$ " x  $5\frac{1}{2}$ ",  $3\frac{3}{8}$ " x 7", and  $3\frac{3}{8}$ " x  $8\frac{1}{4}$ ". The five pound racks are the same dimensions:  $3\frac{7}{8}$ " wide,  $27\frac{5}{16}$ " long, and  $1\frac{3}{8}$ " deep.

Write No. 32 on Inquiry Card—Page 32



A personal card file that fits on your phone, on the wall, or stands on your desk is now available from **Flipdex, 1000 North Division St., Peekskill, N. Y.** The cards can't get lost or out of order even if file is dropped, yet new cards slip in or out wherever needed.

Write No. 33 on Inquiry Card—Page 32  
For More Information Write No. 206  
on Inquiry Card—Page 32→

PURCHASING



H. J. Haughton, Vice President and Controller, Jones & Laughlin Steel Corp.

## "Moore forms help us keep tab on costs"

AUTOMATED SYSTEM GIVES JONES & LAUGHLIN ACCURATE BUDGETING FOR RIGID COST CONTROL

A new costing system helps Jones & Laughlin Steel Corp. pinpoint costs with greater accuracy. This calls for fast action in collecting costs at their source. Punched cards record all elements of cost—yield, labor charges, maintenance and repairs, services, supplies, etc. An IBM 650 computes the actual cost of every product at each production stage.

This costing process is then repeated, but with budget data rather than actual. When both actual and budget costs are known, they are printed, together with the variances between the two, on a Commodity Cost Sheet, a Moore continuous form. This is J & L's control in print.

The mountains of production and cost data are handled at electronic speeds, giving all different levels of J & L's

management timely and easily understood reports. Planning is speeded, with time for correction if needed. Big decisions tend to be more correct; little ones are routine. Valuable yardsticks measure results in all theaters of costs.

The Moore man helped with the scientific design of the procedures and forms used in the Automated Data Processing (ADP) system. For other examples of system improvement, write on your letterhead to the nearest Moore office.



MOORE BUSINESS FORMS, INC., Niagara Falls, N. Y.; Denton, Texas; Emeryville, Calif. Over 300 offices and factories throughout U. S., Canada, Mexico, Caribbean, Central America.



Build control with

# MOORE BUSINESS FORMS





"We like the fact that the information in CONOVER-MAST PURCHASING DIRECTORY is contained in one book instead of several. Because of its size, it is easy to take from one part of the department to another."—K. A. Cruise, Material Manager, Bendix Aviation Corporation, Kansas City, Mo.

# Save 50% of Your Source-Finding Time By Using Conover-Mast Purchasing Directory

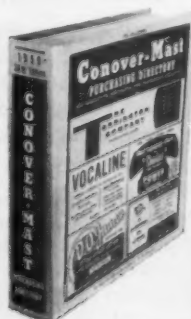
Conover-Mast Purchasing Directory shows you where to go when you are in the market for any industrial product or service.

By rigidly excluding *all* non-industrial listings and advertising, CMPD is kept compact and is complete in one volume. *You can keep it right on your desk.*

Use Conover-Mast Purchasing Directory for your industrial purchases in place of the more cumbersome directories. You'll find its complete cross references make it the easiest and quickest

way to locate suppliers of practically any product. The more you use it the better you'll like it. Hundreds already say that.

If you do not have a copy, write to:



## Conover-Mast PURCHASING DIRECTORY

205 EAST 42nd ST., NEW YORK 17, N. Y.

BRANCH OFFICES

CHICAGO • CLEVELAND • DETROIT • LOS ANGELES





# BUSINESS FORMS WITHOUT CARBONS


NCR PAPER DOES IT!... produces cleaner, clearer copies

Business forms users everywhere are discovering that NCR Paper speeds up their work. Without using carbon paper or even any carbonization, this amazing paper makes perfect copies of sales slips, invoices, premium notices, stock requisitions—any one of hundreds of applications where clean, clear copies are needed.

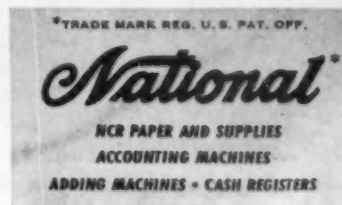
Non-smearing NCR Paper, perfected by the research laboratories of The National Cash Register Company, eliminates smudging of copies or fingers and

is easy to handle because it requires no carbon inserts. Up to five legible copies can be made with a standard typewriter, ball-point pen or pencil and eight or more with a business machine or electric typewriter.

NCR Paper is simple to use. Just put together several forms. Copies are obtained from hand written or business machine or typewriter forms. Finished copies are always neat and clean, easy to read.

Have your forms printed on NCR Paper by your present forms supplier. You'll be amazed how easily it solves the problem of producing multiple copies. You'll get better, cleaner copies in less time! Phone your present forms supplier, today, for further information. 

ANOTHER PRODUCT OF  
**THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio**  
1039 OFFICES IN 121 COUNTRIES • HELPING BUSINESS SAVE MONEY



DECEMBER 22, 1958

For More Information Write No. 207 on Inquiry Card—Page 32

## Association News

### North Jersey Makes Flying Plant Visit

**A**LTHOUGH MOST local purchasing agent associations have made plant visits, the Purchasing Agents Association of North Jersey probably set a new "first" in the conveyance used to make the trip. On its last visit, the association flew from North Jersey to Keene, New Hampshire for a visit to the plant of Miniature Precision Bearings, Inc.

The group was so anxious to see the intricate production prob-

lems involved in miniaturization that it originally planned to take a six hour bus ride. However, when Horace D. Gilbert, president of MPB, heard about this,

he chartered a plane from Newark airport to transport the association to and from Keene.

The all-day trip was a highly successful one.



The North Jersey Purchasing Agents Association lands at the airport in Keene and breathes in some fresh mountain air.



Immediately upon arriving at the MPB plant, the P.A.'s sign the visitors register.



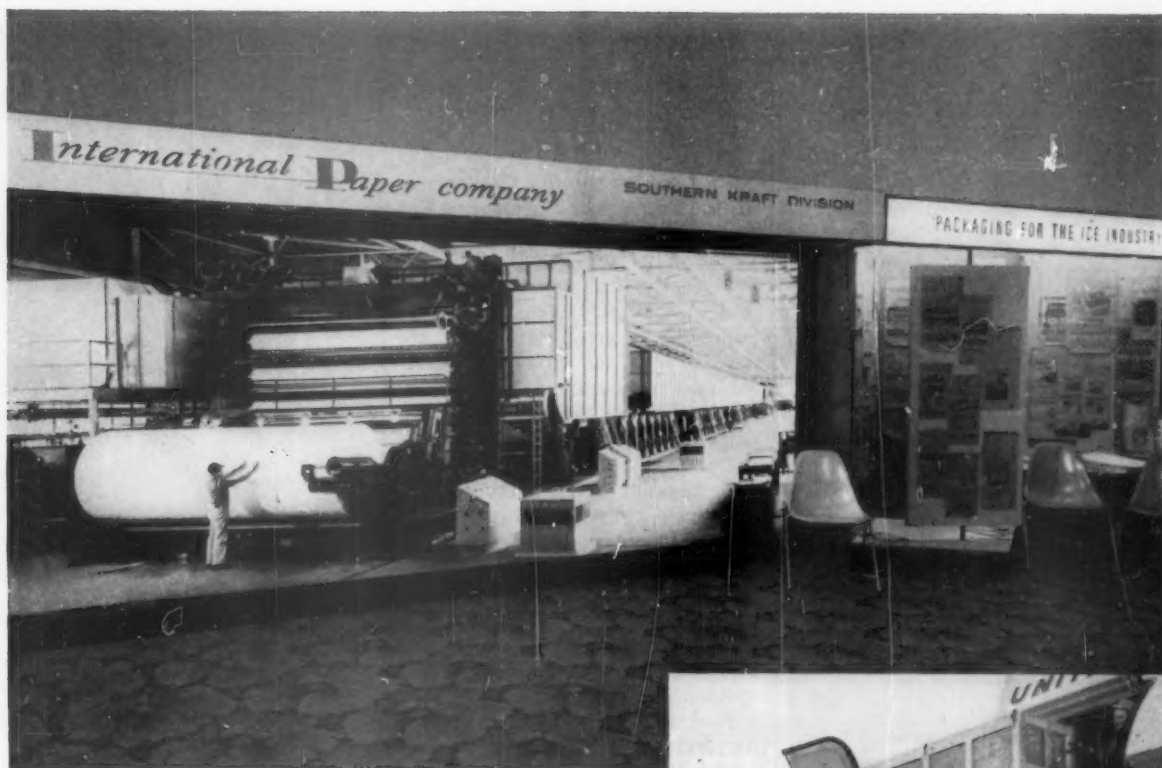
MPB's chief gage engineer, Clement J. Fitzsimmons, explains the operation of his equipment to a group of interested purchasing agents.



A tempting turkey lunch was served to the visitors at the MPB cafeteria located in the factory building.



The end of a perfect day and back to New Jersey.



## *Extra Care on United Air Lines Air Freight helps keep this display on the go!*

**When International Paper Co.** created the paper industry's largest transparency display (shown above), they faced a major problem: how to ship it to all the trade shows with maximum speed and care. They consulted United Air Lines.

That was a year ago. Today—30,000 miles and 18 trade shows later—they know they found the right *solution*. United's scheduling and kid-glove handling kept International's display on the go and in perfect condition.

Why not make United a part of your own distribution system? You'll enjoy the personal attention of veterans in the field, the scope and coverage of an 80-city airway, the speed and dependability of an all-radar fleet. Call the nearest United Air Lines office for information and Reserved Air Freight (guaranteed space).



United's precise scheduling and careful handling of this giant display helped win thousands of new friends for International Paper at trade shows everywhere—people who wouldn't have seen the display otherwise.



For service, information or free Air Freight booklet, call the nearest United Air Lines representative. Or write Cargo Sales Division, United Air Lines, 36 South Wabash Avenue, Chicago 3, Illinois.

**IT COSTS NO MORE FOR EXTRA DEPENDABILITY—SHIP UNITED, THE RADAR AIRLINE**



## TECHNITE®

### high speed steel band saw blades

- Faster speeds and feeds mean lower cost per cut
- High Speed steel stays hard, sharp and accurate
- Narrow kerf reduces waste, gives more pieces from stock
- Cuts stainless, high alloys, aircraft metals
- Available in regular or Shark Tooth



See Your Capewell Distributor



THE CAPEWELL MFG. CO.

HARTFORD 2, CONN.

For More Information Write No. 209  
on Inquiry Card—Page 32

## Association News

### Newspaper Purchasing Conference, Jan. 30-31

The second annual Conference of the Newspaper Purchasing Executives Group will be held in Chicago, at the Sheraton Hotel, 505 North Michigan Avenue, on January 30-31, 1959. All newspaper purchasing personnel are cordially invited to attend. Conference programs include topics which those attending ask to have discussed, so early registration is important.

A popular item is the panel discussion "A Good Buy I Have Made." Many who attended last year's Conference are known to have saved money by virtue of the information they picked up at the meeting. The 1959 program will be of the same practical, specialized nature.

The registration fee is \$10.00. Requests for registration blanks or for further information about the Conference should be addressed to Daniel J. Lewis, purchasing agent, The Christian Science Monitor, One Norway Street, Boston 15, Massachusetts.



At the Reading Purchasing Agents Workshop held at the Iris Club in Wyomissing, are (left to right): Louis J. De Rose, management and training consultant, who conducted the workshop; Jack Brandamore, Fifth District vice president and member of the Northeast Pennsylvania Association, Scranton, Pa. Standing: Robert E. Reddy, president of the Reading Association; Paul C. Beacher, chairman of education committee, Reading Association; and Frank White, vice president of Lancaster Association.



Need a new corrugated  
packaging idea?

# Listen

to your H&D  
Packaging Engineer

## HINDE & DAUCH

Division of West Virginia Pulp and Paper Company

Sandusky, Ohio  
15 Factories  
42 Sales Offices



For More Information Write No. 210  
on Inquiry Card—Page 32

FINEST IN THE NORTHWEST

# Hotel Capri

**LUXURIOUS ROOMS AT SENSIBLE PRICES**

Heart of Downtown. Next door to the shopping center and best theaters. Few steps from Municipal Auditorium.

Good Food . . . Banquet Facilities . . . Free Parking

COME AS YOU ARE

7th and Webster Sts.,  
in the Center of

**ST. PAUL, MINN.**

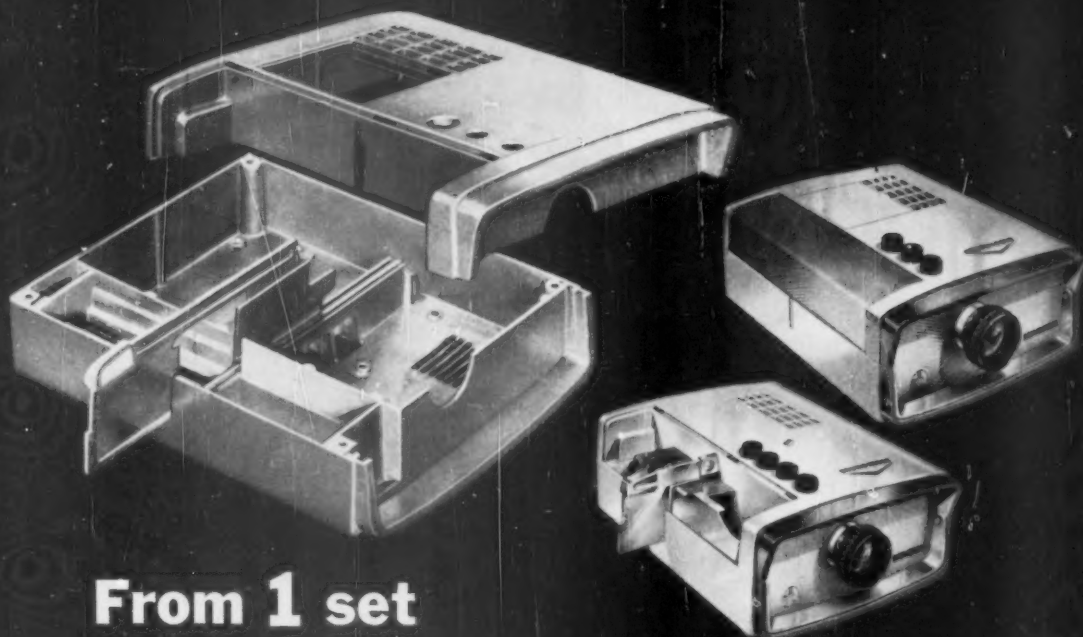
250 modern  
rooms  
from  
**\$350**  
(includes  
**Free Parking!**)

Maurice J. Bluhm  
Managing Director

For More Information Write No. 211  
on Inquiry Card—Page 32

PURCHASING





## From 1 set of die castings Brumberger makes 2 different products

CASE HISTORIES FROM  
MT. VERNON FILES

If you like to project color transparencies, these two new automatic Brumberger\* 35 mm, low silhouette, slide projectors will dazzle you. They are priced much lower than other automatic projectors and eliminate the additional expense of slide magazines and extra carrying case.

These are fine examples of keen engineering perception, for all the inherent advantages of die casting have been applied with those of metal stampings and plastics to produce competitively priced photographic products of outstanding eye appeal and performance.

As you can see, these aluminum die castings are intricate. All the necessary slots, channels, pins, gratings, bosses, holes, compartments, handle holes and various recesses are incorporated into the shells so that simple, rapid assembly and minimum finishing operations of the final product result.

Heat from the projection lamp will not warp or weaken the castings, and correct alignment of the optical system is maintained at all times by the thin but rigid, lightweight sections. For Brumberger, die casting has proved to be a supremely advantageous manufacturing method.

More than that, Brumberger has made full use of Mt. Vernons' complete four-fold service: coordinated designing, die making, casting and machining facilities all under one roof in 200,000 square feet of manufacturing space.

And when you plan to make a better product at lower cost by resorting to die castings, we can also give you invaluable help. Just call in your nearest Mt. Vernon sales representative for fast service.

\*Brumberger — Brooklyn, N. Y.



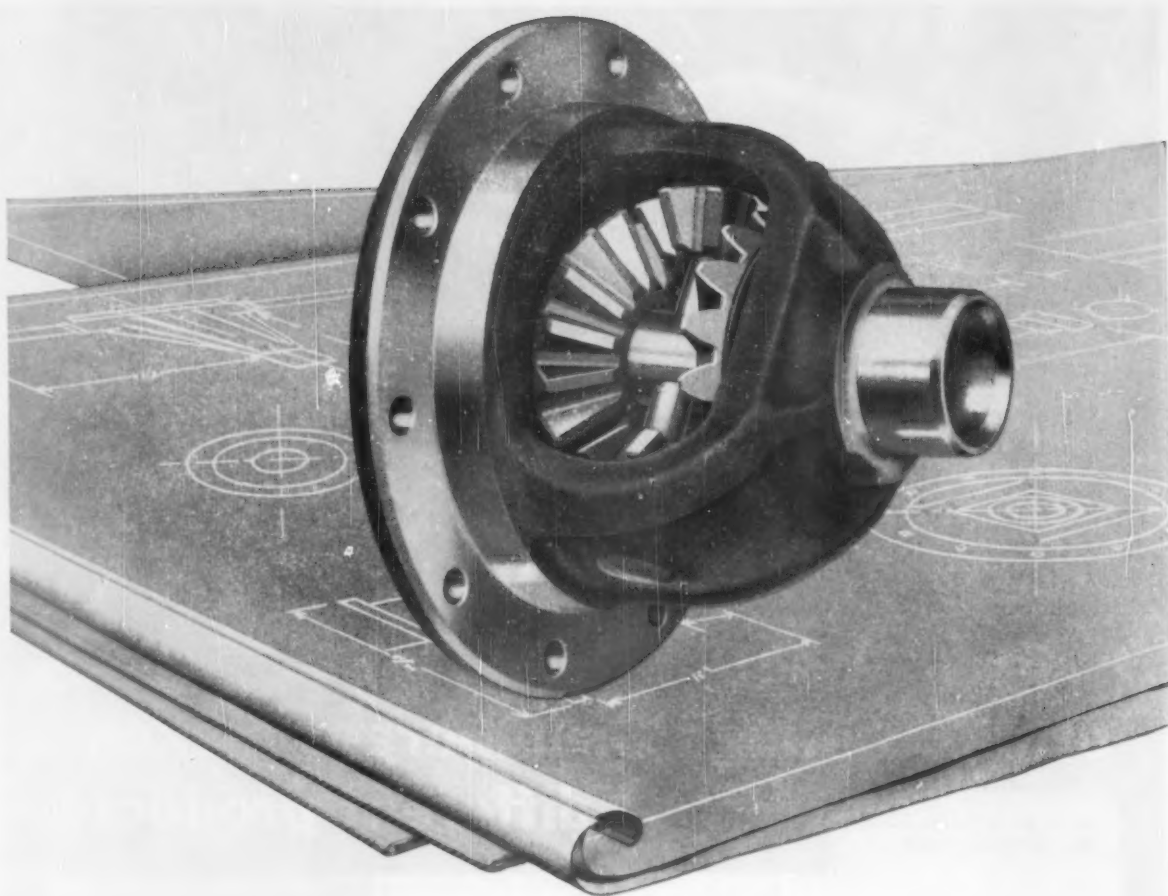
**MT. VERNON**  
DIE CASTING CORP.  
STAMFORD, CONNECTICUT



### SALES REPRESENTATIVES

BIRMINGHAM, ALA.: Mr. I. B. Armstrong, Jr., P. O. Box 2244  
BROOKLYN, N. Y.: Mr. Robert V. Moore, 2317 Plumb 2nd St.  
CLEVELAND, OHIO: Mr. Grant Eller, 6 East 194th St.  
GUILDERLAND, N. Y.: Mr. David H. King, 75 Willow St.  
LUTHERVILLE, MD.: Mr. C. McIntosh Gordon, Box 55, R.R. No. 1  
PITTSBURGH, PA.: Mr. Andrew W. Anderson, 300 Pasadena Drive So.

QUINCY, MASS.: Mr. Edmund W. Libby, 91 Merrymount Rd.  
ROCHESTER, N. Y.: Mr. William Sauers, 101 Briarcliff Rd.  
SKANEATELES, N. Y.: Mr. Jerome J. Theobald, 9 E. Genesee St.  
STAMFORD, CONN.: Mr. Anker Anderson, Cascade Road  
VALLEY FORGE, PA.: Mr. G. T. McMaster, P.O. Box 115



## Save the cost of tooling up! . . . Specify Spicer components in your new axle design

The easy, economical way to design even the most unusual new axle is to build it around one or more Spicer components...this stock differential assembly, for example.

So why not recheck your blueprints? 9 out of 10 times you'll find Spicer can deliver just the differential assembly you need for your latest front or rear driving axle . . . at a fraction of the cost of producing a new design.

What's more, samples can be obtained quickly for any new development program.

The easiest way is to contact your Dana representative. He'll be glad to match up any number of Spicer axle components to create . . . at the lowest possible cost . . . just the axle you have in mind.

Spicer also has a line of rear and front driving axles with load carrying capacities from 1000 to 7500 lbs.

Be sure to write for Bulletin No. 364. It gives you all the dimensions you need to start designing with Spicer differential assemblies.



### DANA CORPORATION

Toledo 1, Ohio

#### DANA PRODUCTS Serve Many Fields:

**AUTOMOTIVE:** Transmissions, Universal Joints, Propeller Shafts, Axles, Power-Lok Differentials, Torque Converters, Gear Boxes, Power Take-Offs, Power Take-Off Joints, Clutches, Frames, Forgings, Stampings.

**INDUSTRIAL VEHICLES AND EQUIPMENT:** Transmissions, Universal Joints, Propeller Shafts, Axles, Gear Boxes, Clutches, Forgings, Stampings.

**AVIATION:** Universal Joints, Propeller Shafts, Axles, Gears, Forgings, Stampings.

Many of these products manufactured in Canada by Hayes Steel Products Limited, Merriton, Ontario.

**RAILROAD:** Transmissions, Universal Joints, Propeller Shafts, Generator Drives, Rail Car Drives, Pressed Steel Parts, Traction Motor Drives, Forgings, Stampings.

**AGRICULTURE:** Universal Joints, Propeller Shafts, Axles, Power Take-Offs, Power Take-Off Joints, Clutches, Forgings, Stampings.

**MARINE:** Universal Joints, Propeller Shafts, Gear Boxes, Forgings, Stampings.

# ROLLWAY® Tru-Rol® BEARINGS



✓ **For a sound balance of  
LOW COST and  
HIGH  
PERFORMANCE**

**When** you need maximum precision bearings, buy them. They'll save you money. Rollway has them in all types and sizes.

But in hundreds of applications, maximum precision means *unused* precision. The speed, load and life-expectancy demands are not critical. For these spots, Rollway's Tru-Rol Bearings are engineered to give all that is required in performance at worthwhile savings in cost.

#### Maximum-Type Design and Construction Principles

The Tru-Rol segmented steel retainer is the strongest, most durable available in commercial-grade bearings. Its separator segments are formed to the curvature of the roller for true axial alignment. In combination with rollers crowned to provide equal load distribution, it withstands heavy shock and reversing loads over long periods.



**For all the precision and performance you need and can use in non-critical applications, ask a nearby Rollway Service Engineer to brief you on Rollway Tru-Rol characteristics and versatility.**

#### ROLLWAY BEARING COMPANY, INC. SYRACUSE, NEW YORK

ENGINEERING OFFICES: Syracuse • Boston  
Chicago • Detroit • Toronto • Pittsburgh  
Cleveland • Seattle • Houston • Philadelphia  
Los Angeles • San Francisco

ROBERT "BOB" LARSON,  
Lenox Band Saw Superintendent,  
over 50 years service.



## PRECISION SAWING WITH THE INCOMPARABLE LENOX BAND SAW BLADES

Incomparable, yes. Advanced heat treating . . . machining . . . and setting methods (developed by LENOX engineers) . . . these are the basic reasons for the outstanding cutting qualities of LENOX band saw blades.

Flame-hardened teeth retain their sharp edges, even when cutting extra-tough material. LENOX bands can be used on all types of machines for contour sawing and cut-off work.

**CUTTING PROBLEM?** Why not let the extensive research facilities and experience of American Saw Company help with your particular cutting application. This service may save time — and money for you. And there's no obligation, of course.



Available  
in  
welded  
bands.  
and  
100 ft.  
coils.



**AMERICAN SAW & MFG. COMPANY**  
SPRINGFIELD, MASSACHUSETTS • U.S.A.  
For More Information Write No. 215 on Inquiry Card—Page 32

## Broader Authority

(Continued from page 57)

means the item may be used throughout the Columbia Gas System.

The standardization program isn't aimed at preventing purchase of new items. Testing of new items in limited quantities is encouraged. If they perform as desired, they're eligible to be put up for standardization.

Some of the brightest spots in purchasing's record come from its continuing drive on transportation costs. Internally, it cut a big chunk out of hauling costs with the new centralized stock system. Previously, individual locations were sending their trucks to storerooms at various locations to pick up their own requirements. This meant that for half the trip each truck was actually deadheading—not to mention wasting truck space on small loads. Now, with stores distributed centrally, loads for a number of locations can be accumulated and shipped out on one truck—at big savings.

"Tremendous savings", according to Mr. Neylon, have been achieved by having the traffic section of purchasing specify exacting routing to be followed on every order. In addition, traffic checks every invoice against any freight charges involved.

Traffic is making every effort to have all purchases made f.o.b. shipping point, but where this is not possible it analyzes all alternative shipping methods where any sizeable volume is involved. An outstanding example of how this analysis pays off is the savings made on the transportation of pipe used in some of the company's drilling operations. Oil country goods are brought in now by barge instead of by rail. On every 500-ton bargeload, the company saves a fat \$3000 in freight charges.

That's part of getting purchasing's story over to management. And it's just another piece of evidence that given a chance to show its stuff, purchasing will prove it can handle big jobs in a big way. It's doing just that every day for Columbia's Charleston Group Companies.



# Spotlighting

## 2 NEW VOGT VALVES



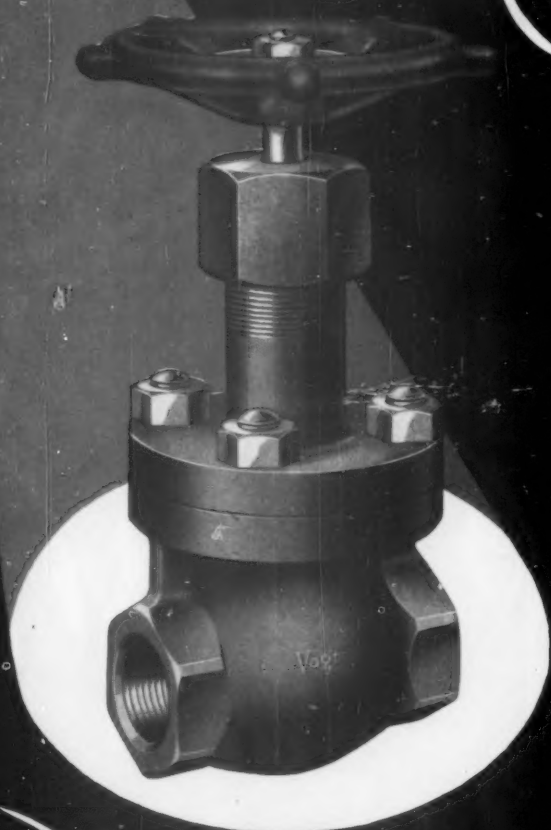
**FORGED STEEL  
INSIDE SCREW  
Bolted Bonnet**



## GATE and GLOBE VALVES

**150-800 Pounds Service  
2000 Pounds Cold, W.O.G.**

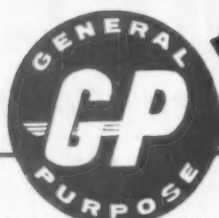
Available from stock in  
1/4" thru 2" sizes and in both  
socket weld and screw ends.



### CHECK THESE FEATURES

- 1** Forged steel pressure containing parts designed for light weight and brute strength.
- 2** Hard faced seats and hardened discs and wedges.
- 3** Spiral wound stainless steel or Monel gaskets to suit trim.
- 4** Extra deep stuffing box for long packing life.
- 5** Dished sure-grip handwheel.

# Vogt



**FORGED STEEL**

## VALVES

Write for literature Dept. 24A-FPM

**HENRY VOGT MACHINE CO., LOUISVILLE, KY.**  
SALES OFFICES

New York, Chicago, Cleveland, Dallas, Camden, N.J.,  
St. Louis, Charleston, W.Va., Cincinnati

## Splices support All-Pro Tackle Lou Groza

The four corner splices in this extruded rubber windshield weather-strip produced by Ohio Rubber are strong enough to fully support 252-lb. All-Professional League Tackle Lou Groza of the Cleveland Browns, plus all his football gear.

Each of the four splices is a corner molded into an extruded weather-strip for perfect fit without tension. Neatness of splice, as well as strength, is an important factor because of the weather-strip's ultimate use in an automobile windshield assembly.

This ability to incorporate desired strength as well as neat appearance into splices is typical of ORCO's "customengineering" of parts made from rubber, synthetic rubber, silicone rubber, polyurethane and flexible vinyl, whether they be molded, extruded or bonded to metal or other material.

ORCO's integrated research, design, electronically controlled mixing and production facilities assure component uniformity and quality to meet the most exacting requirements. Why not check with ORCO engineers on your very next rubber or vinyl component problem and see for yourself how ORCO CUSTOMEERING can work to your greater advantage.



Send for  
free booklet  
"Component  
CUSTOMEERING  
rubber and vinyl parts".



*another example of* **ORCO**

# CUSTOMEERING



**THE OHIO RUBBER COMPANY**  
**WILLOUGHBY, OHIO**

A DIVISION OF THE EAGLE-PICHER COMPANY  
For More Information Write No. 217 on Inquiry Card—Page 32



PURCHASING

You can  
count on  
this  
**FREE  
SURVEY**  
to help cut your  
operating costs

**H**ere's a 2-man team that will give you a powerful lift toward closer *Control* of plant costs . . . your Veeder-Root Industrial Supply Distributor and a Veeder-Root Sales Engineer. Together they can spot and eliminate profit-leaks with facts in figures that give you constant, instant command of every machine and process.

And mostly they can do this by adapting *standard* counters from the complete Veeder-Root line . . . saving you the need and cost of special counters.

What's more, this survey is quick, complete, *and costs you nothing*. All you have to do is speak a word to your Industrial Supply Distributor and he will take it from there. Phone or write him *today*.



**NEW ADDITION TO VEEDER-ROOT'S  
Standard Packaged Line**



NEW PANEL-MOUNTED HIGH-SPEED ELECTRICAL COUNTER, designed for accuracy and long life at very high speeds, up to 3,000 counts per minute. Panels of these counters can be placed in your office . . . and all panels can be reset instantly with one button! Ask your ISD to show you this and other V-R Standard Counters.



**EVERYONE CAN COUNT ON  
Veeder-Root**

**INCORPORATED**

**Hartford 2, Connecticut**

Hartford, Conn. • Greenville, S. C. • Altoona, Pa. • Chicago  
New York • Los Angeles • San Francisco • Montreal

Offices and Agents in Principal Cities

# SANDSTEEL SPRINGS

## GREATER POWER MORE CONSTANT POWER

### For Many Applications

If you are looking for a power spring for any of dozens of applications, look to Sandsteel for your needs. Whether your application calls for the common spiral spring or the unique SANDSTEEL crosscurved spring for either stronger or more constant power, Sandsteel can solve your spring needs.

In its more than 30 years' history, Sandsteel has developed many tools and dies that are adaptable to various types of power spring manufacturing.

The presence of this equipment cuts down the tooling costs to the customer when Sandsteel handles the job.

When spring performance is important, specify Sandsteel.

Spiral Spring



Crosscurved spring in free condition



If your spring requirements are for any of the applications listed below, or similar applications, call on Sandsteel.

#### BALANCERS

Doors  
Lamps  
Tools

#### CAMERAS

Main springs  
Shutter Springs

#### ELECTRICAL INSTRUMENTS

Gyroscopic Controls  
Meters  
Potentiometers  
Servo Mechanisms

#### JEWELRY

Belts  
Bracelets  
Pins

#### OFFICE MACHINES

Billing Machines  
Calculators  
Computers

#### Portable Tape

Recorders  
Printers  
Typewriters

#### RECOIL STARTERS

Chain Saws  
Lawn Mowers  
Outboard Motors

#### RETURN MECHANISMS

Balance Reels  
Drill Press Quills  
Electric Saw Guards  
Fishing Reels  
Tape Dispensers  
Telephone Dials

#### SAFETY DEVICES

Burglar Alarms  
Fire Alarms

#### TENSION DEVICES

Brush Holders  
Gear Trains

#### TIMING DEVICES

Chart Recorders  
Clocks  
Fuzes  
Parking Meters  
Timers  
Watches

#### MISCELLANEOUS

Toys  
Vending Machines

Write for free literature and case history files.



## SANDVIK STEEL, INC.

Sandsteel Spring Division  
Fair Lawn, New Jersey  
Swarthmore 7-6200  
In New York: ALgonquin 5-2200

SS-144

For More Information Write No. 219 on Inquiry Card—Page 32

## MARSH Mastergauge



The gauge that has everything!

• **LEAK-PROOF ONE-PIECE CONSTRUCTION**... bourdon tube fused to socket and tip by exclusive "Conoweld" process.

• **STURDY "MARSHALLOY" CASE**... formed of boiler-plate-thickness steel, copper clad inside and outside to give it the corrosion resistance of solid copper. It's one third lighter, but four times stronger than cast iron.

• **PRECISION "MASTERGAUGE" MOVEMENT**... with such exclusive features as the coined sector gear.

• **AVAILABLE WITH STAINLESS TUBE AND SOCKET**... choice of stainless steels and alloys for all corrosive conditions.

• **WITH "RECALIBRATOR"**... quickest and best way to keep a gauge accurate.

These features are combined only in "Mastergauge", standard bearer for the broad line of Marsh Gauges... each the best of its kind. Ask for data.

## MARSH



MARSH INSTRUMENT CO., Sales Affiliate of Jas. P. Marsh Corp., Dept. G, Skokie, Ill.  
Marsh Instrument and Valve Co. (Canada) Ltd. 8407 103rd St., Edmonton, Alberta.  
Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas.

For More Information Write No. 220 on Inquiry Card—Page 32

## GET MORE OUT OF PURCHASING

Put your own name on the mailing label that delivers **PURCHASING Magazine**... and see how much more you'll get out of the contents. See how much you'll gain by having time to really digest the material written just for you.

A personal copy would always be handy for easy reference—ready with help when you need it.

Order a personal subscription now—\$4. a year. Write to **PURCHASING Magazine**, 205 E. 42nd Street, New York 17, N. Y.



# THE LARGEST STOCK IN STAINLESS STEEL FASTENERS COMES FROM ALLMETAL

You can get PROMPT DELIVERY of Allmetal Stainless Steel Products. Why not pick up your phone and call the nearest division. Direct teletype facilities for your urgent needs are available. You'll be happy you called. You will find this unique procedure the answer to your Stainless Steel fastener problems.



**ALLMETAL**  
SCREW PRODUCTS COMPANY, INC.

MANUFACTURERS OF STAINLESS STEEL FASTENERS  
821 STEWART AVE. • GARDEN CITY • LONG ISLAND, N. Y.  
TWX GC-603 N. Y. PHONE: PIONEER 1-1200

<b>MIDWEST DIVISION</b>	6424 WEST BELMONT AVE. • CHICAGO 34, ILLINOIS TWX CG 3185	PHONE: AVENUE 2-3232, 3, 4
<b>WEST COAST DIVISION</b>	5822 W. WASHINGTON BLVD. • CULVER CITY, CALIF. TWX LA 1472	PHONE: WEBSTER 3-9595

For More Information Write No. 221 on Inquiry Card—Page 32

*we design and  
manufacture wire cloth and  
perforated metal*

# INDUSTRIAL



## Strainers

*Send your inquiries to:*

**WAYNE WIRE CLOTH PRODUCTS, INC.**  
Kalkaska, Michigan

For More Information Write No. 222 on Inquiry Card—Page 32

DECEMBER 22, 1958

# AMES

*Masters of  
Measurement*



**200 SERIES**

One of four sizes; made to AGD specifications.

### PORTA-CHECK®

A transistorized comparator for fast, accurate measurement to .00001".



For more than half a century, Ames measuring instruments have been regarded as the finest available. Wherever precision is really important... you'll find Ames indicators, gauges, micrometers and comparators on the job.

Representatives in Principal Cities



**B.C. AMES CO.**

31 Ames Street, Waltham 54, Mass.

Canadian Office — B. C. Ames Co., 45 Oriole Parkway, Toronto

MANUFACTURERS OF MICROMETER DIAL INDICATORS AND GAUGES

For More Information Write No. 223 on Inquiry Card—Page 32

## **Employment Service**

**Experience:** Purchasing office supplies; equipment; printing and stationery; m.r.o. items. 12 yrs. in management of general purchasing office, assisting with development and implementation of manual, procedures, and standards. Negotiated maintenance contracts on national basis. Average annual volume: approx. \$1,500,000.

**Education:** Business School; Courses at P.A.A. N.Y.

**Will relocate.**

Write: Box 277.

**Experience:** Twelve Years; 5 as Purchasing Agent, 7 as Buyer. Heavy & light electronics, outside purchasing, missiles, aircraft, government contracts, setting up policies, procedures & forms, personnel and office management, steel & aluminum and specialized materials.

**Education:** Evening courses in buying, sales, public speaking & business administration fundamentals.

Write: Box 278.

**Experience:** Five years of industrial purchasing; experience in metals industry; responsible for purchase of all goods and services and expediting. Purchases included chemicals, packaging materials, steel, hardware, office supplies and equipment, cutting tools, laboratory supplies, etc.

**Education:** B.S. in Business Administration, economics major. Additional studies in industrial purchasing.

**Will relocate.**

Write: Box 279.

**Experience:** Four years purchasing and 3 years engineering. Heavy experience technical buying. Well versed in use of modern cost reduction tools such as value analysis, learning curve, cost breakdown analysis. Familiar with weapon system, c.p.f.f., and other types of govt. contracts. Supervised 20 people. Aircraft Industry.

**Education:** B.S.mgt.eng., Eng. major, thermodynamics and heat transfer.

**Will relocate.**

Write: Box 280.

**Experience:** Six years as manager, purchasing and production control and buyer in electronic, precision instrument, and air conditioning industries. Extensive experience in organizing and managing all phases purchasing, production and material control, and shipping and receiving. Want position as director, purchasing and material control.

**Education:** B.S. in business. Major—industrial organization and management.

**Will relocate.**

Write: Box 282.

**Experience:** Diversified purchasing, 6 years, industrial tools, sub-contracts, fabricated precision tools, contract administration, castings, forgings, mill supplies, etc. Materials and inventory control. 3 years as fabrication sup't. 2 years quality control and actual inspection. Good on efficiency, systems, write procedures. Metallurgical experience also.

**Education:** B.S. Business administration, A.E., industrial degree, courses in industrial management, and in metals. Prefer New England area.

Write: Box 283.

**Experience:** Six years purchasing experience buying packaging supplies for consumer products, capital equipment & installations expense items. Coordinate inventory control with rapidly changing production schedules. Surplus disposal, procedure analysis, supervision, expediting, cost reduction studies, package development.

**Education:** Continuing in evening college for B.S. in Business Administration.

Prefer Cincinnati area.

Write: Box 285.

**Experience:** Purchasing agent eight years multi-plant large volume chemicals, negotiated contracts. For 7 years in charge of all procurement in a single plant manufacturing luminescent compounds, light assembly. Responsibilities included training purchasing personnel, supervision stores, expediting. Started career in paper converter on inventory control and purchased MRO Supplies.

**Education:** Economic major.

**Will relocate.**

Write: Box 286.

**Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence to Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.**

**Experience:** Three years as purchasing agent in complete charge of \$20,000,000 annual purchases. 3 years experience in engineering capacity. 4 years experience on central manufacturing staff including being quality engineer. Currently assist. to vice pres. on mfg., sales, and engineering functions.

**Education:** B.S. Industrial-Mechanical Engineering.

**Will relocate.**

Write: Box 287.

**Experience:** Former associate director of purchases multi-plant aircraft, electronic, auto parts co. 20 yrs. experience purchasing administration. Specialist cost reduction, purchase analysis, gov't. contracting and multiple plant purchasing. Legal phases, vendor relationship. Make or buy.

**Education:** 2 years business school administration. 2 yrs. production engineering, 4 years special management courses.

**Will relocate.**

Write: Box 288.

**Experience:** Purchasing agent power plant, waterworks and hospital construction projects in Iran for 4 years. Project engineer industrial plant utilities, design and cost analyses 3 years. Contract administrator, contract bid preparation, specifications writing and cost estimating, commercial, municipal and military projects 3 years. Contract technical specialist military procurement 4 years.

**Education:** B.S. in civil engineering.

**Will relocate.**

Write: Box 289.

**Experience:** Experienced and qualified to direct all phases of procurement. General accounting and follow-up background. 20 years in buying of production and non-production materials, sales of salvage, scrap steel & metals.

**Education:** Two years of night school in general accounting. Various courses in purchasing procedures.

**Will relocate.**

Write: Box 290.

**Experience:** Two years as buyer for medium sized rubber company handling purchases for all MRO supplies, raw material and component parts. Four years as purchasing agent for a medium sized storm window manufacturer handling all purchases.

**Education:** 1 year college. Special courses in purchasing.

Write: Box 291.



RAMBLER AMERICAN STATION WAGON



RAMBLER AMERICAN 2-DOOR SEDAN



RAMBLER SUPER SEDAN



RAMBLER CROSS COUNTRY STATION WAGON

#### RAMBLER AMERICAN STATION WAGON

The new 100-inch wheelbase station wagon that costs less to buy and operate. Top economy, easiest handling and parking. Yet offers full 5-passenger room and spacious cargo area for samples and luggage.

#### RAMBLER AMERICAN 2-DOOR SEDAN

Public utilities and other fleet users who want an economical American-built automobile are switching to the Rambler American . . . room for 5-big passengers. Also available in 3-passenger business sedan.

#### RAMBLER SUPER SEDAN

The compact 108-inch wheelbase sedan that has shattered all sales records. Offers even greater economy in 1959. Costs less to buy and operate. And top resale value, too. Rambler is the soundest Fleet Buy.

#### RAMBLER CROSS COUNTRY STATION WAGON

Sales and service fleet users, manufacturing companies, many types of businesses find the Rambler station wagon perfect for their needs. Lots of room for tools, samples and display materials.

WRITE OR WIRE  
**FLEET SALES**  
**AMERICAN MOTORS CORP.**  
DETROIT 32, MICH.

## In 1959, More than Ever... **RAMBLER** Remembers the Fleet Operator

### LEARN WHY THE NEW '59 RAMBLER IS THE SMART FLEET BUY

Now, more than ever before, it makes good sound business sense to switch to Rambler for your fleet requirements. For while other cars grow bigger, more expensive to operate, Rambler retains its smart compact size and offers even greater economy for 1959. Rambler is quality built, with many comfort and convenience features not available in other cars at any price. Rambler's Single Unit Construction means greater strength, safety and longer car life. And Rambler is tops in resale value among low price cars. Get all the facts that prove Rambler is your smart fleet buy for '59!

### FLEET LEASING ARRANGEMENTS AVAILABLE

If your firm leases fleet units, ask your leasing company for low Rambler rates or write us for the names of leasing companies with whom we have working arrangements.

# Advertisers In This Issue

<b>A</b>	
Allmetal Screw Products Co. Inc. ....	95
American Brass Co., The .....3rd Cover	
American La France, Division of Sterling Precision Corp. ....	64
American Motors Corp. ....	97
American Saw & Mfg. Co. ....	90
Ames Co., B. C. ....	95
Anaconda Copper Mining Co. & Subsid. Cos. ....3rd Cover	
Associated Spring Corp. ....	22

<b>B</b>	
Barnes Co., Wallace ....	22
Barnes Co. Ltd., Wallace, The ....	22
Barnes-Gibson-Raymond ....	22
Behr Manning Corp. ....4th Cover	
Bethlehem Steel Co. ....	99
Buffalo Bolt Co., Div. of Buffalo-Eclipse Corp. ....	70

<b>C</b>	
Cambridge Wire Cloth Company, The	74
Capewell Manufacturing Co. The	86
Capri, Hotel	86
Carborundum Co., The	31
Carpenter Steel Co., The	76
Conover-Mast Purchasing Directory	82
Continental Drill Corp.	36
Cope Division, T. J., Rome Cable Corp.	38
Copper & Brass Research Association	26,27
Crucible Steel Company of America	41

<b>D</b>	
Dana Corp.	88
Denver-Chicago Trucking Co.	77
Detroit Stamping Co.	42
Dunbar Bros. Co.	22

<b>F</b>	
Fairmont Aluminum Co.	69
Fort Howard Paper Co.	100
Fuller Company	63

<b>G</b>	
Gaylord Container Corporation of Crown Zellerbach Corporation	46
General Electric Co. Metallurgical Products Department	34, 35
Gibson Co. William D., The	22
Goodrich Industrial Products Company, B. F.	3
Gould-National Batteries, Inc.	65
Grinnell Co., Inc.	44

<b>H</b>	
Hinde & Dauch	86
Hyatt Bearing Div., General Motors Corp.	37

<b>I</b>	
Inland Steel Co.	71

International Paper Co., Container Div.	43
Southern Kraft Division	75

<b>K</b>	
Klein & Sons, Mathias	23

<b>M</b>	
Marsh Corp., Jas. P.	94
Mid-west Abrasive Co.	62
Mohawk Tools, Inc.	16
Mt. Vernon Die Casting Corp.	87
Moore Business Forms	81

<b>N</b>	
National Acme Co. The	6
National Cash Register Co.	83
New Departure Div. of General Motors	8
Norton Company	4th Cover

<b>O</b>	
Ohio Div., Associated Spring Corp.	22
Ohio Rubber Co.	92

<b>P</b>	
Powell Valves	24

<b>R</b>	
Raymond Mfg. Co.	22
Riegel Textile Corp.	10
Roebbling's Sons Co., John A.	67
Rollway Bearing Company	89
Rome Cable Corp., T. J. Cope Division	38
Ryerson & Son, Inc., Joseph T.	48

<b>S</b>	
Saginaw Steering Gear Div., General Motors Co.	29
Sandsteel Spring Division Sandvik Steel, Inc.	94
Sealmaster Division, Stephens- Adamson Mfg. Co.	25
Shell Chemical Corp.	2nd Cover
SKF Industries Inc.	1
Standard Oil Company	79
Standard Pressed Steel Company	14
Stanscrew Fasteners	32
Steiner Company	30
Studebaker-Packard Corp.	63

<b>T</b>	
Technical Charts, Inc.	78
Texas Company	4
Thomson Co., Judson L.	39
Timken Roller Bearing Co.	73

<b>U</b>	
Union Bag-Camp Paper Corporation	18, 19
Union Wire Rope Co.	72
United Air Lines, Air Freight Div.	85
United States Steel Corporation (Steel Plus)	20, 21

<b>V</b>	
Veeder-Root, Inc.	93
Vogt Machine Co., Henry	91

<b>W</b>	
Waverly Petroleum Products Inc.	45
Wayne Wire Cloth Products, Inc.	95
Wellington Sears Company	66
Williams Co., The A. C.	12
Wolverine Tube	2

<b>Y</b>	
Youngstown Welding & Engineering Co., The	33

## Purchasing

203 East 42nd Street, New York 17, N. Y.  
Murray Hill 9-3250

### BUSINESS STAFF

Ray Richards ..... Publisher  
Alex G. Graam ..... Assistant Publisher  
Joseph T. McCourt ..... Sales Manager  
Hugh Robinson ..... Eastern Regional Mgr.,  
Tom Navin ..... New York  
Jack Morris ..... New York  
Joseph Bessette ..... Mid-west Regional Mgr.  
Thomas F. Hannon ..... District Mgr., Chicago  
Ed Crilly ..... Chicago  
C. R. Kingsley ..... Western Regional Mgr.,  
Los Angeles

### Ellsworth Brown

Central Regional Mgr., Cleveland  
Robert Hawley ..... District Mgr., Cleveland  
Jack T. Steelman ..... District Mgr., Detroit  
Wayne Slockbower ..... Promotion Manager  
Walter H. Kirchner ..... Mgr. Circulation Service  
Irene Kreidler ..... Mgr. Advertising Service

### BRANCH OFFICES

737 North Michigan Avenue .. Chicago 11, Ill.  
1900 Euclid Avenue ..... Cleveland 15, Ohio  
864 So. Robertson Blvd. .. Los Angeles 35, Calif.  
868 National Press Building Washington 4, D.C.  
15817 James Couzens Highway .. Detroit, Mich.

Published by

### CONOVER-MAST PUBLICATIONS, INC.

B. P. Mast, Sr. .... Chairman of the Board  
B. P. Mast, Jr. .... President  
Ray Richards ..... Vice President  
A. M. Morse, Jr. .... Vice President  
A. H. Dix ..... Vice President, Research  
Harvey Conover, Jr. .... Secretary  
Leo Haggerty ..... Treasurer  
John T. Dix ..... Director of Mid-West Operations  
Daniel G. Smith ..... Circulation Manager



Conover-Mast Publications  
Purchasing  
Mill & Factory • Space/Aeronautics  
Construction Equipment  
Volume Feeding Management  
Business/Commercial Aviation  
Conover-Mast Purchasing Directory



IF ALL THE FLOOR SPACE  
TIED UP IN STEEL INVENTORIES  
WERE COMBINED INTO ONE GIANT WAREHOUSE,  
WHAT A TAX BILL YOU'D HAVE!

BUT, FORTUNATELY, YOUR LOCAL STEEL SERVICE CENTER  
PAYS THE BILLS ON FLOOR SPACE  
WHEN YOU BUY FROM HIS INVENTORY.

TAXES ARE JUST ONE OF THE MANY COSTS  
OF POSSESSION FOR STEEL  
YOUR LOCAL STEEL SERVICE CENTER  
CAN HELP YOU REDUCE!

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

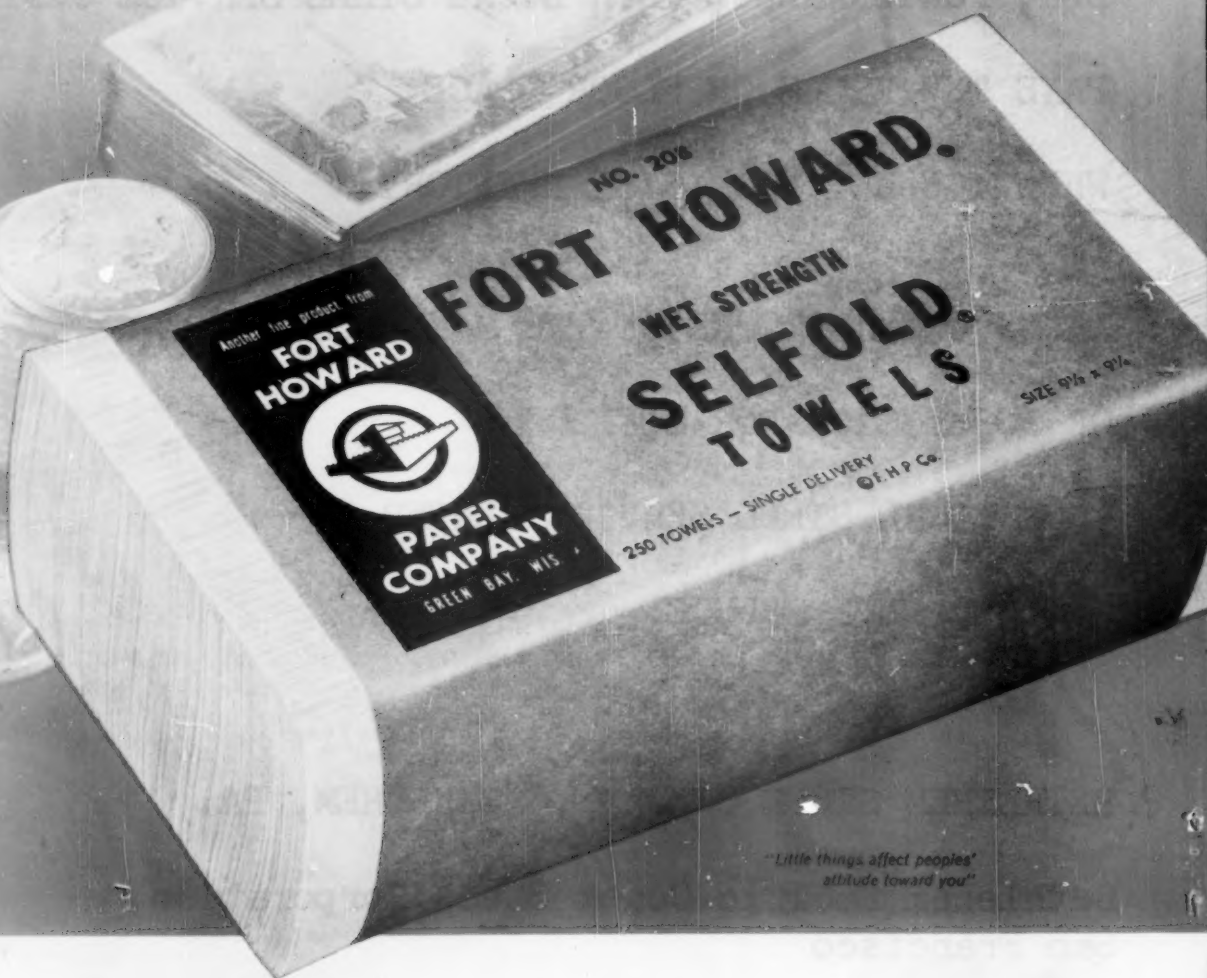
Bethlehem Pacific Coast Steel Corporation,  
San Francisco

**BETHLEHEM STEEL**



# THRIFTY

... big quality money saver  
... good-will builder in the washroom



"Little things affect peoples'  
attitude toward you"



© Fort Howard Paper Company

## Fort Howard Paper Company

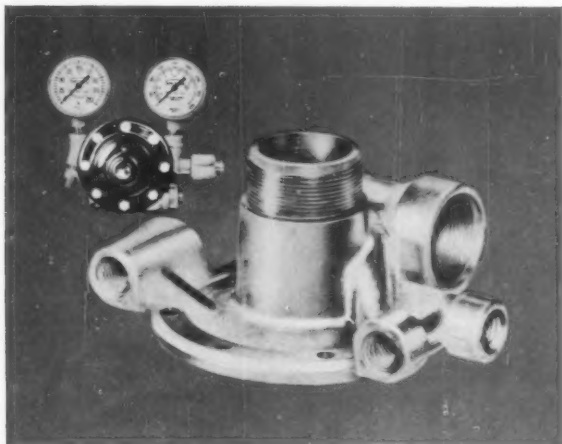
Green Bay, Wisconsin

America's most complete line of paper towels, tissues and napkins

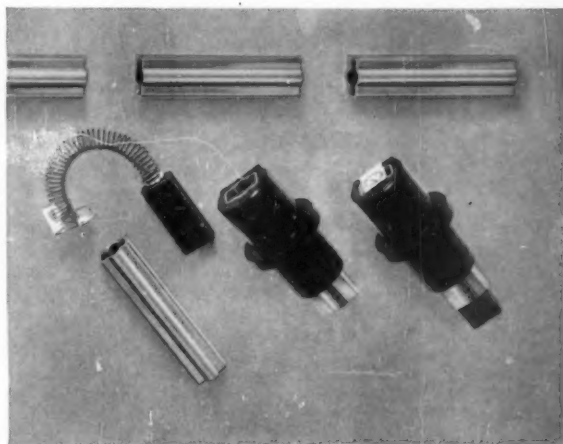


# TAKE A FRESH LOOK at the

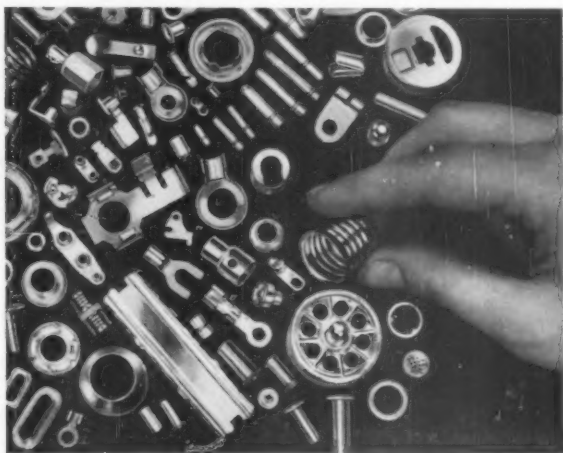
way you are fabricating metal parts. Cost-cutting possibilities are almost unlimited with these Anaconda pre-formed mill products and press products.



**DIE-PRESSED FORGINGS**, made of twice-wrought metal, offer superior uniformity, denseness, accuracy. *Savings*: replace more costly built-up assemblies—often are less in first cost than sand castings—require minimum surface machining to size—simplify secondary operations—lower tool cost—lower finishing cost.

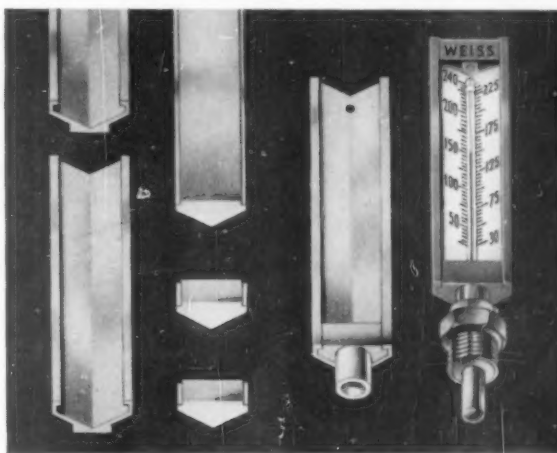


**SPECIAL-SHAPE TUBES** can, as in the case of Electrolux, save several steps in arriving at a finished part. Brass electric-motor brush holder (above) is cut economically from long lengths of tube pre-shaped to accommodate both brush and spring. Uniform accuracy of all dimensions helps provide good brush stability.



**MULTIPLE-PLUNGER AND PROGRESSIVE-TOOL-PRESS PRODUCTS** are cutting costs throughout industry—often over 50%. Main reasons: The American Brass Company's complete design engineering service, long experience, specialized production equipment, a big selection of stock tools. Metals: copper, copper alloys, nickel, iron, steel, stainless steel, or aluminum.

**H**ERE are four immediate approaches to cutting costs. Re-evaluate your designs and fabrication methods with these short cuts to finished products in mind. Wherever you spot a possible saving, send a sample, drawing, or description—with the quantity you need, the metal or properties you require—and ask for a quotation. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Limited, New Toronto, Ontario.



**EXTRUDED SHAPES**. Wherever you fabricate from solid rod or bar—or castings—consider savings in machining, tooling and scrap by use of extruded shapes. Albert A. Weiss & Sons substituted two extruded shapes, above, for a sand casting—cut cost of thermometer case 41%, got an additional 30% saving in assembly because of consistently uniform dimensions.

**DIE-PRESSED FORGINGS • SPECIAL-SHAPED TUBES  
EXTRUSIONS • FABRICATED METAL GOODS**

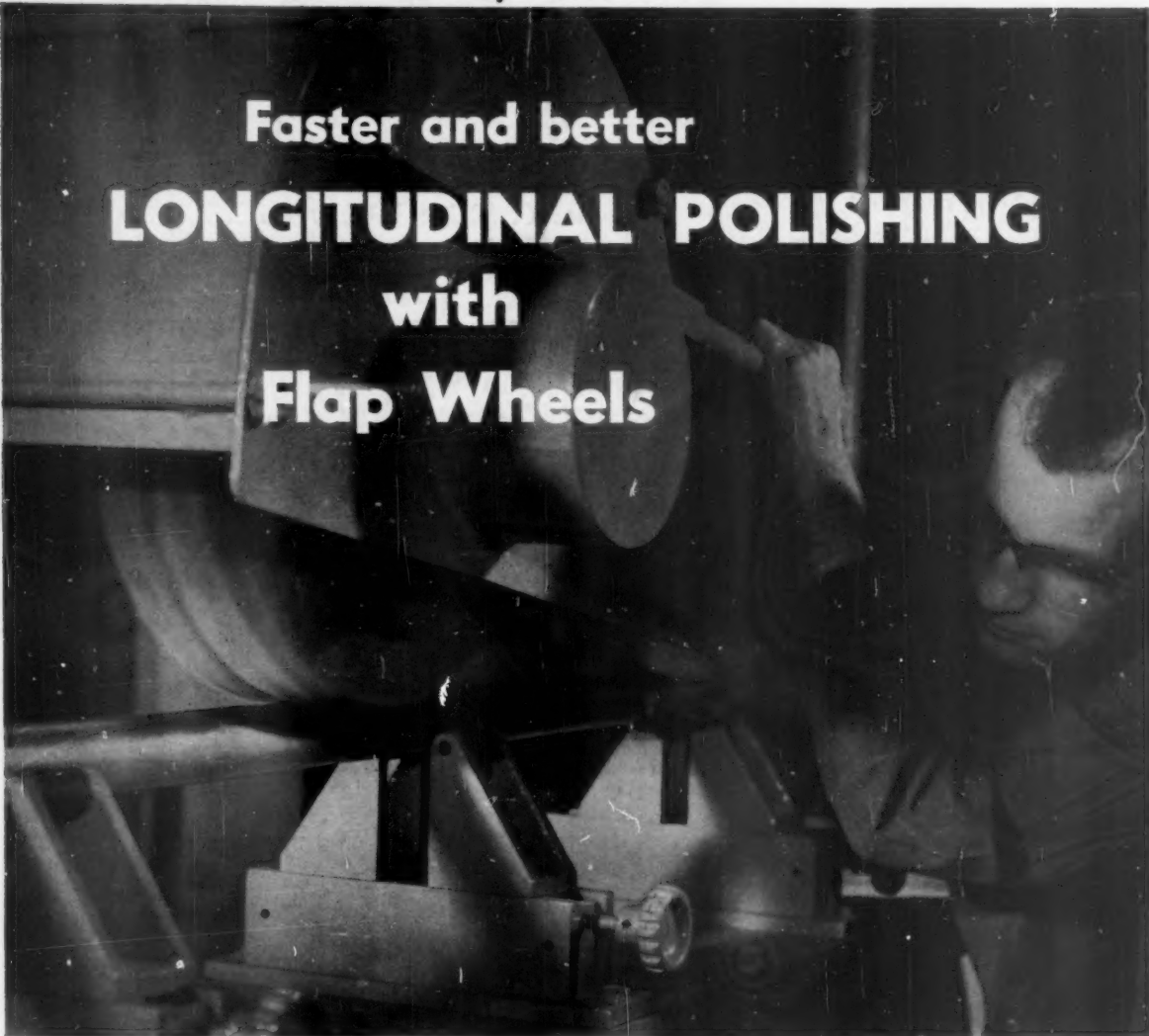
*products of*

## ANACONDA®

*Made by The American Brass Company*

*"Abrasive Tech" shows the way . . .*

# Faster and better LONGITUDINAL POLISHING with Flap Wheels



Cloth coated abrasive flap wheels are the newest production tool in the metal working industry. This longitudinal polisher with a two-direction oscillating flap wheel speed-finishes stainless steel tubing . . . or spot polishes special extruded shapes.



An "Abrasive Tech" method like this may speed your production, save you time and money. There are 17 well-equipped "Abrasive Tech" Methods Rooms ready to help solve your individual problems or demonstrate new techniques and machines. Ask your Behr-Manning representative or write direct.

**BEHR-MANNING CO.**

TROY, NEW YORK

A DIVISION OF NORTON COMPANY

**NORTON**  
ABRASIVES®



BEHR-MANNING PRODUCTS: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes  
NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electrochemicals  
In Canada: Behr-Manning (Canada) Ltd., Brantford. For Export: Norton Behr-Manning Overseas Inc., Troy, N. Y., U.S.A.

IA-9

For More Information Write No. 153 on Inquiry Card—Page 32